

THE "AVO" TRANSISTOR DATA MANUAL



INTERNATIONAL TRANSISTOR DATA MANUAL



AVO LTD

AVOCET HOUSE

92-96 VAUXHALL BRIDGE ROAD · LONDON S.W.1 · ENGLAND

"AVO" International Transistor Data Manual

Keeping a manual of this type fully corrected and up-to-date is, as you will appreciate, a complex and exacting task.

If you have any suggestions to make regarding this publication or wish to contribute data or observations which may be to our mutual benefit, we will be very pleased to receive your remarks set out on the postcard below.

NAME AND
ADDRESS
OF SENDER

THE
AVO
INTERNATIONAL
TRANSISTOR DATA
MANUAL

EDITOR: C. E. BULL



Compiled and Published by

AVO LTD.

(A MEMBER OF THE METAL INDUSTRIES GROUP OF COMPANIES)

"AVOCET HOUSE," 92-96 VAUXHALL BRIDGE ROAD, LONDON, S.W.1

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AVO TRANSISTOR ANALYSER

FOREWORD

This International Transistor Data Manual is intended for use in conjunction with the AVO Transistor Analyser, but the Information is presented in such a manner that it forms a quick and convenient guide for general use.

It is our intention to publish further editions of this Manual from time to time, the enclosed postcard should be completed and returned to us, the user will then be informed when further editions become available.

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Whilst every care has been taken in the preparation of this manual to ensure that the data given is correct, the Company cannot accept any responsibility for damage caused to a Transistor under test, or the instrument, due to the inclusion of incorrect information.

We owe a debt of gratitude to many people who have helped us with the compilation of this manual, and in particular we wish to thank Messrs. Newmarket Transistors Ltd., also The International General Electric Co. for the suggestions and data they have put at our disposal.

The Editor would like to thank many manufacturers for their kind co-operation in supplying data etc., for inclusion in this work and would be grateful to receive further information for inclusion in later editions.

USEFUL INFORMATION

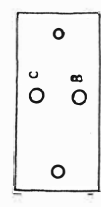
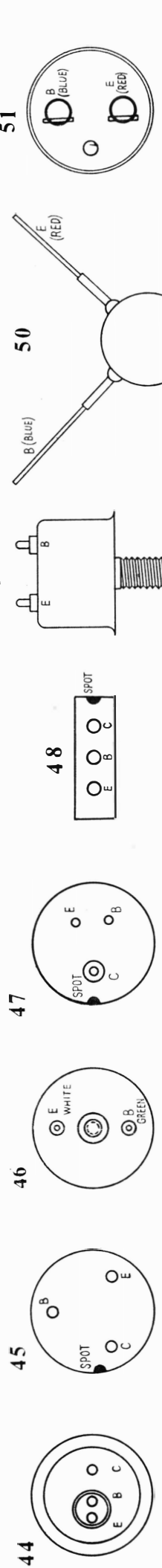
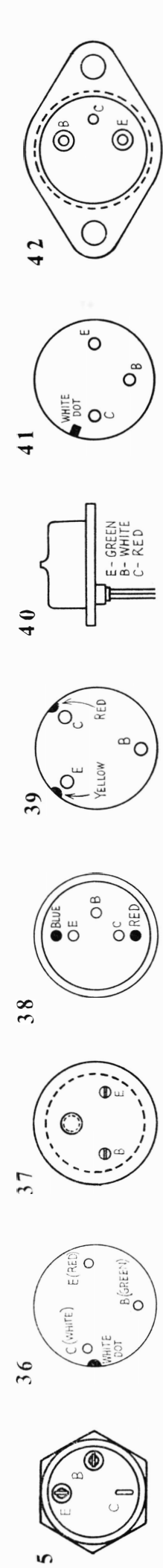
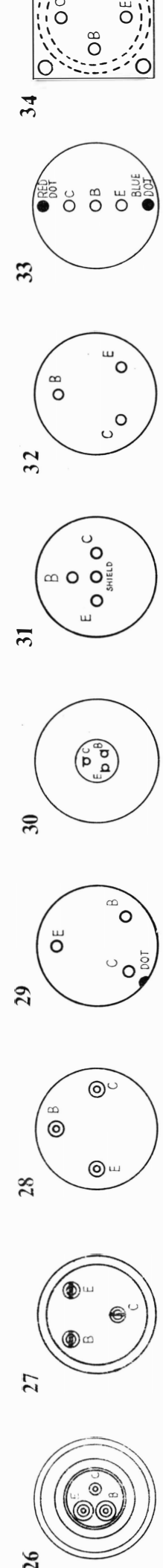
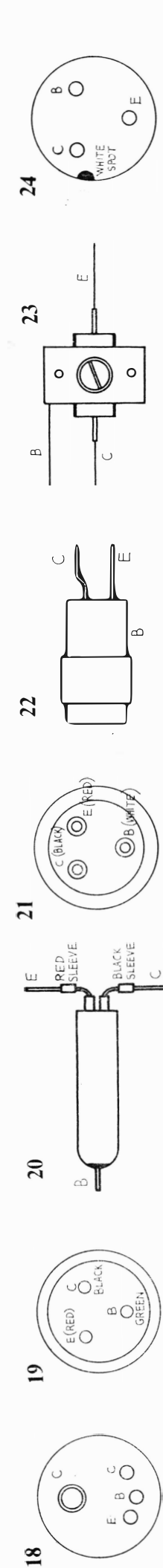
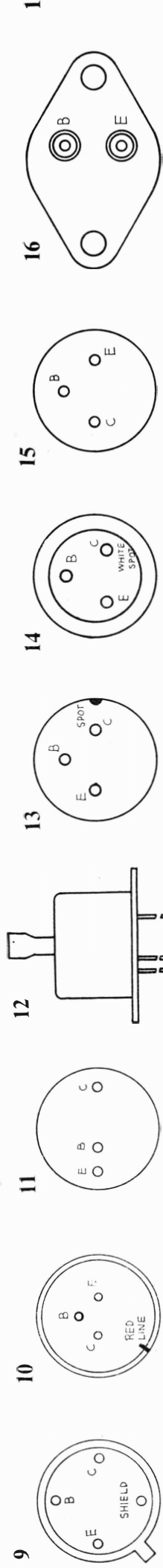
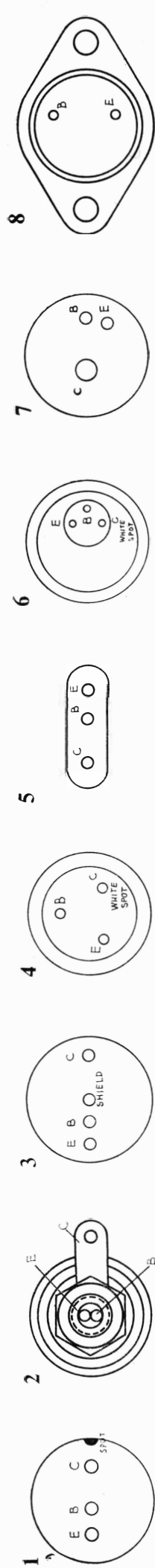
$\left. \begin{array}{l} \beta \\ h_{fe} \\ h_{21e} \\ \alpha' \end{array} \right\}$ Small signal current gain in the grounded emitter configuration.

$\left. \begin{array}{l} \bar{\beta} \\ \bar{\alpha}' \\ h_{FE} \end{array} \right\}$ DC or large signal current gain = $\frac{I_c - I_{co}}{I_b + I_{co}}$

$\left. \begin{array}{l} I'_{co} \\ I_{ceo} \end{array} \right\}$ Collector current with collector junction reversed biased and base open circuit.

$\left. \begin{array}{l} I_{co} \\ I_{cbo} \\ \alpha \end{array} \right\}$ Collector current when collector junction is reversed biased and emitter open circuit.
 Small signal current gain in the common base configuration.

DIAGRAM OF TRANSISTOR CONNECTIONS



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USEFUL INFORMATION

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 Small signal current gain in the common base configuration.

NOTES RELATING TO THIS MANUAL

- | | | |
|--------|-----|--|
| Column | 1. | Transistors. These are in strict numerical/alphabetical order with the exception of the unclassified stop press. |
| „ | 2. | Under the heading connections, the Type refers to the diagram of connections on page 8. |
| „ | 3. | Manufacturers. A list of abbreviations together with the manufacturers name, and address wherever possible, are given on pages 9-14. |
| „ | 4. | Type. NPN or PNP. Point contact transistors are tested in the PNP position. |
| „ | 5. | Vce. This is the voltage at which I'_{co} , β and $\bar{\beta}$ should be measured. |
| „ | 6. | I'_{co}. The figure quoted is for a temperature of 25°C (77°F.). A variation of 10°C. will approx. double the I'_{co} figure. Many manufacturers only quote I_{co} , but I'_{co} can be calculated as being $I_{co} \times \beta - I_{co}$. It will be found that I'_{co} will be fairly constant for a wide range of Vce. Silicon transistors usually have an I'_{co} of less than 1μA. |
| „ | 7. | This column is usually blank since most manufacturers do not quote I_b , but it was felt that many users may wish to record their own test figures. |
| „ | 8. | Ic. This is the collector current at which β and $\bar{\beta}$ should be measured. |
| „ | 9. | Beta measurements should be made at the collector voltage and currents given in Columns 5 and 8. The figures given in these three columns are for small signal current gains, data marked thus '†' indicates that the figure is for DC current gain. This information has been extracted from data supplied by the manufacturer and figures quoted are what the manufacturer considers to be representative of current production. |
| „ | 10. | Typical Noise. At the Vce and Ic quoted the typical noise figure is given, but it should be noted that test is only a qualitative one and that wide variations are possible. |
| „ | 11. | Max ratings at 25°C. (77° F.). The Max Vce quoted is for minimum Ic collector currents. |
| „ | 4. | No. This refers to the connections to the transistor which are shown on page 8. |
| „ | 12. | Remarks. This column gives any other useful information which might be of use to the user e.g. equivalents, construction, bi-directional types etc. |
| „ | 13. | Transistor. This is a duplication of Column 1 and has been included to enable the user to obtain the data easily should the pages be bound, such that the left hand page does not line up with the right hand page. |

ABBREVIATIONS USED FOR MANUFACTURERS' NAMES

CODE	MANUFACTURER	AGENT OR SUBSIDIARY IN THE U.K.
ADA. ...	Ad. Auriema Inc., 89, Broad Street, New York 4, N.Y. U.S.A.	
ADV. ...	Advanced Research Associates, Box 68, Kensington, Maryland, U.S.A.	
AEG. ...	Allgemeine Elektricitäts- Gesellschaft, Hohenzollerndamm 150, Berlin-Grünwald, Germany.	
AMP. ...	Amperex Electronic Corp., 230, Duffy Avenue, Hicksville, Long Island, N.Y., U.S.A.	
AT. ...	Associated Transistors Ltd., Stonefield Way, South Ruislip, Middlesex. England.	
BC. ...	Brush Crystal Co. Ltd., Hythe, Southampton, England.	
BEN. ...	Bendix Semicon Products, 201, Westwood Avenue, Long Branch, New Jersey, U.S.A.	
BO. ...	Bogue Electric Manufacturing Co., 100, Pennsylvania Avenue, Patterson 3, New Jersey, U.S.A.	
BTH. ...	British Thomson Houston, A.E.I. Ltd., Carholme Road, Lincoln. England.	
CBS ...	CBS International, 46, E. 52nd Street, New York, 22, N.Y., U.S.A.	
C.L. ...	Compagnie de Lampes, 29, Rue de Lisbonne, Paris 8, France.	
CRY ...	Crystalonics, 249, 5th Street, Cambridge 42, Massachusetts. U.S.A.	

CODE	MANUFACTURER	AGENT OR SUBSIDIARY IN THE U.K.
CSF. ...	Compagnie Generale de Telegraphie Sans Fil, 79, Boulevard Haussman, Paris 8, France.	
CLE. ...	Clevite Transistor Products, 241-257 Crescent Street, Waltham 54, Massachusetts, U.S.A.	
DEL. ...	Delco Radio Division, Kokomo, Indiana, U.S.A.	AC-Delco, Dunstable, Bedford, England.
EE. ...	English Electric Ltd., Chelmsford, Essex, England.	
ES. ...	Siemens Edison Swan Ltd., 155, Charing Cross Road, London, W.C.2. England.	
F.C. ...	Fairchild Semiconductor Corp., 545, Whisman Road, Mountain View, California, U.S.A.	
FER. ..	Ferranti Ltd., Hollinwood, Lancs. England.	
FIV. ...	Fivre, Via. Guasalla 2, Milana, Italy.	Electrical Agencies (London) Ltd., Central Hall, 16, Drayton Park, London, N.5., England.
GE. ...	International General Electric Co., 150, East 42nd Street, New York 17, N.Y., U.S.A.	International General Electric Co. of New York, Lincoln House, 296-302, High Holborn, London, W.C.1., England.
GEC. ...	General Electric Co. Ltd., School Street, Hazel Grove, Stockport, Cheshire, England.	
GEM. ...	Great Eastern Mfg. Co., 163, Rensen Avenue, Brooklyn, 12. N.Y., U.S.A.	
GT. ...	General Transistor Corp., 91-27, 138 Place, Jamaica 35, N.Y., U.S.A.	
HA ...	Hughes Aircraft, Culver City, California, U.S.A.	Hughes International Kershaw House, Great West Road, Hounslow, Middlesex, England.

CODE			MANUFACTURER	AGENT OR SUBSIDIARY IN THE U.K.
HI.	...	...	Hitachi Ltd., Kodaira-machi, Kitatamagun, Tokyo, Japan.	Marubeni-Iida Co. Ltd., 65, Bishopsgate, London, E.C.2., England.
HIV.	...	...	Hivac Ltd., Stonefield Way, South Ruislip, Middlesex. England.	
HOF.	...	...	Hoffman Semiconductor Division, 1,001, Arden Drive, EL Monte, California, U.S.A.	
IND.	...	...	Industro Transistor Corp., 35, 1036 Avenue, Long Island City 6, N.Y., U.S.A.	
INT.	...	...	Intermetall Gesellschaft fur Metal- lurgie und Elektronik, Königsallee 14-16, Düsseldorf, Germany.	
KO.	...	...	Kobe Kogyo Corp., Hyogo-Ku, Kobe, Japan.	
LCT.	...	...	Laboratoire Central de Telecom- munications, 46, Avenue de Breteuil, Paris 7e, France.	
MAT.	...	...	Matushita Electronics Corp., 300, Oaza Nishiiozumi, Takatsuki, Osaka, Japan.	
ME.	...	...	Mitsubishi Electric Mfg. Co., C/o Tokyo Buildings, 2-3 Manunouchi, Chicityodaku, Tokyo, Japan.	
MFD.	...	...	Micofarad, 18-20, Via Derhanino, Milan, Italy.	
MH.	...	...	Minneapolis-Honeywell, Minneapolis 8, Minnesota, U.S.A.	Honeywell Controls Ltd., Greenford, Middlesex, England.
MR.	...	...	Motorola Inc., 4545, W. Augusta Blvd., Chicago 51, Illinois U.S.A.	
MULL...	...	...	Mullard Ltd., Torrington Place, London W.C.1.	

CODE	MANUFACTURER	AGENT OR SUBSIDIARY IN THE U.K.
NAT. ...	National Semiconductor Corp., P.O. Box 443, Danbury, Conn, U.S.A.	
NEC. ...	Nippon Electric Co. Ltd., 2 Shiba-Machi, Minato-ku, Tokyo, Japan.	
NM. ...	Newmarket Transistors Ltd., Exning Road, Newmarket, Suffolk, England.	
NP. ...	Nuclonic Products, 1601 Grand Vista Ave., Los Angeles 55, California.	
PCO. ...	Philco Corp., Lansdale, Pennsylvania, U.S.A.	Semiconductors, Ltd., Cheney Manor, Swindon, Wilts. England.
PHIL. ...	Phillips Nederland N.V., Eindhoven, Holland.	Mullard Ltd., Mullard House, Torrington Place, London, W.C.1. England.
PSI. ...	Pacific Semiconductors Inc. 10451, West Jefferson Blvd., Culver City, California, U.S.A.	Allied International Co. Ltd., 4, Tilney Street, Park Lane, London W.1., England.
RAD. ...	La Radiotechnique, Div. Tubes Electroniques, 130, Ave, Ledru Rollin, Paris 11e, France.	
RAY. ...	Raytheon Co., Waltham 54, Massachusetts, U.S.A.	B. & K. Laboratories Ltd., 4, Tilney Street, Park Lane, London, W. 1. England.
RCA. ...	Radio Corp of America, Harrison, New Jersey U.S.A.	R.C.A. (Gt. Britain) Ltd., Lincoln Way, Windmill Road, Sunbury-on-Thames, Middlesex, England.
RHE. ..	Rheem Semiconductor Corp., 327 Moffett Boulevard, Mountain View, California, U.S.A.	
ROS. ...	Dr. Ing Rudolph Rost, Ubberstrasse 21, Hanover 1, Germany.	

CODE	MANUFACTURER	AGENT OR SUBSIDIARY IN THE U.K.
SC. ...	Semiconductors Ltd., Cheney Manor, Swindon, Wilts.	
SGS. ...	Societa Generale Semiconductori S.P.A. Agrate, Milan, Italy.	Erie Resistors Ltd., Carlisle Road, The Hyde, London, N.W.9, England.
SH. ...	Siemens & Halske A.G. Balanstrasse 73, Munich 8, Germany.	R. H. Cole (Overseas) Ltd., 2, Caxton Street, Westminster, London, S.W.1.
SIL. ...	Silicon Transistor Corp. 150, Glen Cove Road, Carle Place, Long Island, N.Y., U.S.A.	
SO. ...	SONY Corp. 351, Kitashinagawa-6, Shinagawa-ku, Tokyo, Japan.	
SP. ...	Sperry Semiconductors Div., Sperry Road Corp., South Norwalk, Connecticut, U.S.A.	Semiconductors Ltd., Cheney Manor, Swindon, Wilts.
SPR. ...	Sprague Electric Co., North Adams, Massachusetts, U.S.A.	
ST. ...	Sylvania-Thorn, Great Cambridge Road, Enfield, Middlesex.	
STC. ...	Standard Telephones & Cables Ltd., Connaught House, 63, Aldwych, London. W.C.2.	
SYL. ...	Sylvania Semiconductor Div. 100, Sylvan Road, Woburn, Massachusetts, U.S.A.	
TAG. ...	Transistor A.G. Fluelastr. 17., Zurich g/48, Switzerland.	
TFN. ...	Telefunken G.m.b.h. Geschäftsbereich Rohren, Ulm (Donau) Söflingerstr. 100.	
TH. ...	Compagnie Francaise Thomson Houston, 173, Boulevard Haussman, Paris 8e France.	Mining & Chemical Products, Station Wharf, Alperton, Middlesex.

CODE			MANUFACTURER	AGENT OR SUBSIDIARY IN THE U.K.
TI.	...	...	Texas Instruments Incorp. P.O. Box 312, Dallas, Texas, U.S.A.	Texas Instruments Ltd., Dallas Road, Bedford, England.
TK.	...	...	Suddeutsche Telefon-Apparate Kabel-und Drahtwerke A.G. Schliebfach, Nurnberg 2, Germany.	Neoflex Ltd., The Grafton Corner, 123, Neasden Lane, London, N.W.10.
TOS.	...	...	Tokyo Shibaura Electric Co., 1, Komukaitoshiba Cho., Kawasaki, Japan.	Mitsui and Co. Bucklesbury House, 83, Cannon Street., London, E.C.4.
TS.	...	...	Tung Sol Electric. 545, N. Arlington Avenue. East Orange, New Jersey. U.S.A.	
TT.	...	...	Transitron Electronic Corp. 168, Albion Street., Wakefield. Massachusetts, U.S.A.	G.E. Industrial Supplies Ltd. 357, Euston Road, London, N.W.1.
UST.	...	...	U.S. Transistor Corp 149, Eileen Way, Syosset, Long Island, N.Y., U.S.A.	
VAL.	...	...	Valvo Ltd., Monckebergstrasse 7, Hamburg 1, Germany.	Mullard Ltd. Mullard House, Torrington Place. London, W.C.1.
WE	...	...	Western Electric Co., 120, Broadway, New York, 5 N.Y., U.S.A.	
WES.	...	...	Westinghouse Electric International Co. 40 Wall Street, New York 5, N.Y., U.S.A.	
WH.	..	..	Westinghouse Brake & Signal Co. Ltd., 82 York Way, London, N.1.	

Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2N140	SYL RCA ADA	PNP	11	10.5				0.6		48	
2N141	SYL	PNP	32							40	
2N142	SYL	PNP	32							40	
2N143	SYL	PNP	10								
2N144	SYL	NPN	10								
2N155	CBS NP SYL CL	PNP	16	(12)				360		40	
2N156	CBS SYL	PNP	21	(12)				180		40	
2N158	CBS	PNP	21	(24)				180		40	
2N158A	CBS	PNP	21	(24)				180		40	
2N160	BO	NPN	5								
2N160A	BO	NPN	5								
2N161	BO	NPN	5								
2N161A	BO	NPN	5								
2N163	BO	NPN	5								
2N163A	BO	NPN	5								
2N166	GE	NPN	13					1		32	
2N167	GE	NPN	12								
2N168	GE FIV	NPN	12					1		20	
2N168A	SYL FIV GE	NPN	12						23		135
2N169	GE	NPN	12	4.5				1		36	50
2N169A	SYL GE	NPN	12	4.5				1		36	50
2N170	GE	NPN	12	4.5				1		20	
2N175	ADA RCA	PNP	11	4.5				0.5		65	
2N176	RCA SYL MR	PNP	16	2				500		45	
2N180	CBS	PNP	1	6	300			1		60	
2N181	CBS	PNP	1	6	300			1		60	
2N182	CBS	NPN	1	6				1		25	
2N183	CBS	NPN	1	6				1		40	
2N184	CBS	NPN	1	6				1		60	
2N185	TI	PNP	5	10.5				100	35		
2N186	TH GE	PNP	11	4.5				1		24	
2N186A	TH GE	PNP	11	4.5				1		24	
2N187	TH	PNP	11	4.5				1		36	
2N187A	TH GE	PNP	11	4.5				1		36	
2N188	TH	PNP	11								
2N188A	TH GE	PNP	11								
2N189	TH GE	PNP	11	4.5				1		32	
2N190	TH GE	PNP	11	4.5				1		42	
2N191	TH GE	PNP	11	4.5				1		67	
2N192	TH GE	PNP	11	4.5				1		90	

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
Vce	Ic mA	db	Vce	Ic mA	Pc mW		
			12	15	35		2N140
			60	800	1.5W		2N141
			60	800	1.5W		2N142
			60	800	1W		2N143
			60	800	1W		2N144
				3A	1.5W		2N155
			30	3A	1.5W		2N156
			60	3A	1.5W		2N158
			80	3A	20W		2N158A
4.5	1	25	40	25	150		2N160
4.5	1	25	30	25	150		2N160A
4.5	1	25	40	25	150		2N161
4.5	1	25	40	25	150		2N161A
4.5	1	25	40	25	150		2N163
4.5	1	25	40	25	150		2N163A
			6	20	25		2N166
			30	75	65		2N167
			15	20	55		2N168
			15	20	65		2N168A
			15	20	65		2N169
			25	20	65		2N169A
			6	20	25		2N170
4.5	0.5	6		2	20		2N175
6	1	12	30	3A	10W		2N176
					150		2N180
6	1	12			150		2N181
					100		2N182
					100		2N183
					100		2N184
			20	150	150		2N185
			25	200	75		2N186
			25	200	180		2N186A
			25	200	75		2N187
			25	200	180		2N187A
			25	200	75		2N188
4.5	1	15	25	200	180		2N188A
4.5	1	15	25	50	75		2N189
4.5	1	15	25	50	75		2N190
4.5	1	15	25	50	75		2N191
4.5	1	15	25	50	75		2N192

Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2N193	SYL	NPN	5	6			1	4	7.5	15	
2N194	SYL	NPN	5	6			1	5	8	15	
2N194A	SYL	NPN	5	6			1	5	8	15	
2N206	RCA	PNP	5	4.5			1		47		
2N207	PCO SC	PNP	24	4.5			1	35	100		
2N207A	PCO SC	PNP	24	4.5			1	35	100		
2N207B	PCO SC	PNP	24	6			1	35	100		
2N211	SYL	NPN	5	6			1	5	10	15	
2N212	SYL	NPN	5	6			1	10	20	30	
2N213	SYL	NPN	5	6			1	70	150	500	
2N213A	SYL	NPN	5	6			1	100	150	250	
2N214	SYL	NPN	5	1.5			10	50	75	100	
2N215	RCA	PNP	13	6			1		44		
2N216	SYL	NPN	5	6			1	5	7.5	15	
2N217	SYL RCA	PNP	1 or 13	1.5			50		75		
2N218	RCA	PNP	13	10.5			1		48		
2N219	RCA	PNP	13	10.5			0.6		75		
2N220	RCA	PNP	13	4.5			0.5		65		
2N223	PCO SC	PNP	24	4.5			2	70	110	150	
2N228	SYL	NPN	5	6			1	50	70	100	
2N229	SYL	NPN	5	6			1	25	75		
2N231	PCO SC	PNP	24	1.5			0.5	19			
2N232	PCO SC	PNP	24	1.5			0.5	9	20		
2N233	SYL	NPN	5	6			1	10		50	
2N233A	SYL	NPN	5	6			1	10		50	
2N234A	BEN	PNP	16	4.5			250		40		
2N235	BEN	PNP	16								
2N235A	SYL BEN CL	PNP	16	4.5	200	10.5	250		40		
2N236B	SYL BEN	PNP	16	4.5	200		500		80		
2N240	SC	PNP (SB)	10	3			0.5	16	30		
2N241	TH GE	PNP	11								
2N241A	TH GE	PNP	11								
2N242	SYL TS	PNP	16								
2N244	TI CBS	NPN	13	4.5			1		10		
2N245	CBS	NPN	13	4.5			1		20		
2N246		NPN	13	4.5			1		30		
2N247	CBS SYL RCA	PNP	3	10.5			1	20	60	175	
2N249	TI	PNP	13				100	30			
2N250	SYL CL	PNP	16								
2N255	CBS SYL	PNP	16								

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
Vce	Ic mA	db	Vce	Ic mA	Pc mW		
3	0.5	12	18	50	50		2N193
			18	100	50		2N194
			18	50	50		2N194A
				50	75		2N206
			12	20	50		2N207
			12	20	50		2N207A
			12	20	50		2N207B
			10	50	50		2N211
			18	50	50		2N212
			25	100	150		2N213
			25	100	125		2N213A
			25	100	150		2N214
				50	50		2N215
			18	50	50		2N216
			18	70	80		2N217
				15	80		2N218
				15	50		2N219
				2	100		2N220
			18	150	50		2N223
			25	100	50		2N228
			10	40	150		2N229
			4.5	3	9		2N231
			4.5	3	9		2N232
			10	50	50		2N233
			10	50	50		2N233A
			30	3A	25W		2N234A
			40	2A	25W		2N235
			40	3A	25W		2N235A
			40	3A	25W		2N236B
			6	15	10		2N240
			25	200	100		2N241
			25	200	200		2N241A
			45	2A	15W*		2N242
					750		2N244
							2N245
			35	10	35		2N246
			25	200	350		2N247
			30	3A	25W*		2N249
			15	3A	6.25W*		2N250
							2N255

*With heat sink.

Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2N257	SYL INT	PNP	16	(12)				500		50	
2N260	CL	PNP	1					1		16	
2N260A	CL	PNP	1					1		16	
2N261	CL	PNP	1					1		10	
2N262	CL	PNP	1					1		20	
2N262A	CL	PNP	1					1		20	
2N265	TH GE	PNP	11	4.5				1		110	
2N268	CL SYL INT	PMP	16								
2N269	RCA		13								
2N270	RCA	PNP	11						500		100
2N271	RAY	PNP	5	6				1		45	
2N271A	RAY	PNP	5	6				1		45	
2N272	RAY	PNP	5								
2N273	RAY	PNP	5					50	10		
2N274	RCA	PNP	13	10.5				1		60	
2N279	AMP	PNP	1	4.5				0.5	20		
2N280	AMP	PNP	1	4.5				3	30		
2N283	AMP	PNP	1					5	30		
2N292	SYL GE	NPN	12						6		44
2N293	GE	NPN	12								
2N296	SYL	PNP	16	(60)		1.5					
2N297	CL	PNP	16	(12)	300			1A		64	
2N297A	CL DEL MR BEN	PNP	16	(12)	300			1A		64	
2N300	PHIL	PNP (SB)	15					5	11	18	
2N301	RCA SYL	PNP	16	1.5				700		62	
2N301A	RCA SYL	PNP	16	1.5				700		62	
2N302	RAY	PNP	5							45	
2N306	CBS SYL	NPN	13					1		16	
2N307	SYL	PNP	16	(35)	15						
2N307A	SYL	PNP	16								
2N311	GT	PNP	13	4.5	250			10		50	
2N315	CBS GT IND	PNP	13	4.5				1		70	
2N315A	GT	PNP	13	4.5	600			1		70	
2N316	GT	PNP	13	4.5	600			1		130	
2N316A	GT	PNP	13	4.5	600			1		130	
2N317A	GT	PNP	13	4.5	600			1		180	
2N319	TH GE	PNP	17	1.5				20		33	
2N320	TH GE	PNP	17	1.5				20		48	
2N321	SYL TH GE	PNP	17	1.5				20		80	
2N322	TH GE	PNP	17	1.5				20		48	

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
Vce	Ic mA	db	Vce	Ic mA	Pc mW		
4-5	1	8	25	2A	14W*		2N257
				50	200		2N260
				50	200		2N260A
				50	200		2N261
				50	200		2N262
				50	200		2N262A
			30	50	75		2N265
			60	2A	14W		2N268
				100	120		2N269
				75	128		2N270
			4-5	10	200	150	2N271
			10	10	200	150	2N271A
			12	24	100	150	2N272
				30	100	150	2N273
				10	80		2N274
			20	10	125		2N279
			20	10	125		2N280
			20	10	125		2N283
			15	20	65		2N292
			15	20	65		2N293
4-5	1	6	60	2A	25W*		2N296
			50	5A	14W		2N297
			50	5A	10W		2N297A
			4-5	5	20		2N300
			20	1A	11W*		2N301
			30	1A	11W*		2N301A
			10	200	150		2N302
			12	100	50		2N306
			35	2A	10W*		2N307
			35	2A	17W*		2N307A
			15		150		2N311
			20	200	100		2N315
			20	200	150		2N315A
			15	500	100		2N316
			15	500	150		2N316A
			10	500	150		2N317A
			20	200	200		2N319
			20	200	200		2N320
			20	200	200		2N321
			16	100	140		2N322

*With heat sink.

Warning : Reduce base current to zero before connecting transistor

TRANSISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2N323	TH GE	PNP	17	1.5				20		70	
2N324	TH GE	PNP	17	1.5				20		125	
2N325	SYL	PNP	16								
2N326	SYL CBS	NPN	16								
2N327	RAY	PNP	13					1	9		
2N327A	RAY	PNP	13							14	
2N328	RAY	PNP	13					1	18		
2N328A	RAY	PNP	13							28	
2N329	RAY	PNP	13					1	36		
2N329A	RAY	PNP	13					1	36	60	
2N330	RAY	PNP	13					1	9		
2N330A	RAY	PNP	13					1	9	25	
2N331	RCA GT MR	PNP	13	6				1	30	50	70
2N332	GE TT BO	NPN	17 or 13	6				1	9	14	20
2N333	GE TT BO	NPN	17 or 13	6				1	18	28	41
2N334	TT GE	NPN	17	6				1	18	45	90
2N335	GE TT BO	NPN	17	6				1	37	60	90
2N336	TT GE	NPN	17	6				1	78	100	300
2N337	TT GE	NPN	17	(20)				1	19	55	
2N338	TT GE	NPN	17	(20)				1	39	99	
2N339	TT	NPN	17	10.5				5	9		90
2N340	TT	NPN	17	10.5				5	9		90
2N341	TT	NPN	17	10.5				5	9		90
2N342	TT	NPN	17	10.5				5	9		32
2N343	TT	NPN	17	10.5				5	9		32
2N344	SC PCO	PNP (SB)	10	3				0.5	11	22	33
2N347	BO	NPN	5	10.5				10	9	48	
2N348	CBS BO	NPN	5	6				1		45	
2N349	CBS BO	NPN	5								
2N350	SYL	PNP	16								
2N350A	MR	PNP	16	2				700		30	
2N351	SYL MR RCA	PNP	16	2				700		45	
2N351A	MR	PNP	16	2				700		45	
2N352	PHIL	PNP	15					1A	30		
2N354	PHIL	PNP	10					1	9		
2N355	PHIL	PNP	10					1	9		
2N356	RCA CBS	NPN	13	4.5				1	20	30	50
2N356A	GT	NPN	13	4.5	600			1		60	
2N357	CBS SYL GT RCA	NPN	13	4.5	600			1		45	
2N357A	GT	NPN	13	4.5				1		90	

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
V _{ce}	I _c mA	db	V _{ce}	I _c mA	P _c mW		
4.5	1	6	16	100	140		2N323
4.5	1	6	16	100	140		2N324
			35	2A	12W*		2N325
			35	2A	7W*		2N326
				100	335		2N327
		18	40	50	350		2N327A
				100	335		2N328
		18	30	50	350		2N328A
				100	335		2N329
		18	20	100	350		2N329A
				50	335		2N330
		8	20	50	350		2N330A
6	1	20	16	200	75		2N331
4.5	1	20	90	30	150		2N332
4.5	1	20	45	25	150		2N333
4.5	1	15	45	25	150		2N334
4.5	1	20	45	25	150		2N335
4.5	1	10	45	25	150		2N336
			40	20	125		2N337
			40	20	125		2N338
			55		1W		2N339
			85		1W		2N340
			125		1W		2N341
			60		1W		2N342
			60		1W		2N343
			5	5	20		2N344
			60	60	750		2N347
			90	50	750		2N348
			125	40	750		2N349
				3A	10W*		2N350
			40		25W		2N350A
				3A	10W		2N351
			40	3A	25W		2N351A
			40	2A	25W		2N352
				50	150		2N354
				50	150		2N355
			18	500	100		2N356
			20	500	150		2N356A
			15	500	100		2N357
			20	500	150		2N357A

*With heat sink.

Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2N358	CBS SYL GT RCA	NPN	17 or 13	4.5	600			1		60	
2N358A	GT	NPN	13	4.5	600			1		120	
2N359	RAY MR IND	PNP	13								
2N364	TI	NPN	5					1	9		
2N365	TI	NPN	5					1	19		
2N366	TI	NPN	5					1	49		
2N367	TI	PNP	5					1	9		
2N368	TI	PNP	5					1	19		
2N369	TI	PNP	5					1	49		
2N370	SYL RCA	PNP	3 (12)					1	40	60	175
2N371	SYL RCA	PNP	3 (12)					1	20	60	175
2N372	SYL RCA	PNP	3 (12)					1	20	60	400
2N373	SYL RCA	PNP	3 (12)					1	20	60	175
2N374	SYL RCA	PNP	3 (12)					1	20	60	400
2N375	MR CL	PNP	16								
2N376	RCA	PNP	16	10.5				700		60	
2N376A	MR	PNP	16	10.5				700		60	
2N383	SYL TS	PNP	17								
2N384	SYL RCA	PNP	31	(12)				1.5	20	60	175
2N385	CBS SYL	NPN	17 or 13	(25)	50	400					
2N388	GT CBS SYL	NPN	17 or 13	3		50		0.5	40	155	
2N389	TT	NPN	34	(30)				300		10	
2N393	SC	PNP	14	3				0.5	40	155	
2N394	GE	PNP	17								
2N395	TH GE	PNP	17	1.5				10	20		150
2N396	GT TH GE	PNP	17	1.5				10	30		150
2N397	TH GE	PNP	17	1.5				10	40		150
2N398	RCA	PNP	13	1.5				57		60	
2N399	SYL BEN	PNP	16	4.5				500		80	
2N400	BEN	PNP	16	4.5				250		200	
2N401	SYL BEN	PNP	16	4.5				500		52	
2N404	GE GT RCA TS	PNP	17								
2N405	SYL RCA	PNP	11	6				1	20	35	80
2N406	SYL RCA	PNP	13	6				1	20	35	80
2N407	SYL RCA	PNP	5 or 11	1.5				50		65	
2N408	SYL RCA	PNP	13	1.5				50		65	
2N409	SYL RCA	PNP	11	6				1	22		110
2N410	SYL RCA	PNP	13	6				1	22	48	110
2N411	SYL RCA	PNP	11	6				1	22	48	110
2N412	SYL RCA	PNP	13	6				1	22	48	110

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
Vce	Ic mA	db	Vce	Ic mA	Pc mW		
			12	500	100		2N358
			15	500	150		2N358A
			22		150		2N359
				50	150		2N364
				50	150		2N365
				50	150		2N366
				50	100		2N367
				50	150		2N368
				50	150		2N369
			20	10	80		2N370
			20	10	80		2N371
				10	80		2N372
				10	80		2N373
				10	80		2N374
			60	3A	45W		2N375
			40	3A	10W*		2N376
			40	3A	25W		2N376A
			25	200	200		2N383
				10	120		2N384
			25	200	150		2N385
			20	200	150		2N388
			60		85W*		2N389
			6	3	50		2N393
			10	200	150		2N394
			15	200	150		2N395
			20	200	150		2N396
			15	200	150		2N397
			100	100	50		2N398
			40	3A	25W		2N399
			40	3A	25W		2N400
			40	3A	25W		2N401
			24	100	120		2N404
			18	35	150		2N405
			18	35	150		2N406
			18	70	150		2N407
			18	70	150		2N408
			18	15	50		2N409
			18	15	50		2N410
			20	15	50		2N411
			20	15	50		2N412

*With heat sink.

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2N413	TS RAY IND	PNP	17	6			1			25	
2N413A	SYL	PNP	17	6			1			25	
2N414	TS RAY	PNP	17	6			1			40	
2N414A	TS	PNP	17	6			1			40	
2N415	RAY	PNP	13				1	80			
2N416	TS RAY IND	PNP	17	6			1	45	60	220	
2N417	TS RAY	PNP	17	6			1	60	80	260	
2N417A	TT	NPN	17					8		30	
2N418	RAY BEN	PNP	16	3			500	90			
2N419	RAY BEN	PNP	16	4.5			250		40		
2N420	BEN	PNP	16	3			500		90		
2N420A	BEN	PNP	16	3			500		90		
2N422	MR	PNP	13	6			1		90		
2N424	SYL TT	NPN	34	(30)			300		6		
2N425	MR GT SYL TS	PNP	13	(20)	1mA						
2N426	MR GT SYL TS	PNP	13	(18)	1mA						
2N427	MR GT SYL TS	PNP	13	(15)	1mA						
2N428	MR GT SYL TS	PNP	17 or 13	(12)	1mA						
2N438	GT CBS	NPN	13	(6)	300			15	25		
2N438A	GT CBS	NPN	13	(6)	300			15	25		
2N439	CBS GT SYL	NPN	13	(6)	300		1	30	60		
2N439A	CBS	NPN	13	(6)	300		1	30	60		
2N440	SYL CBS GT	NPN	13	(6)	300		1	50	125		
2N440A	CBS	NPN	13	(6)	300		1	30	65		
2N444	CBS	NPN	13	4.5			1	10			
2N444A	GT	NPN	13	4.5	600		1	15	25		
2N445	CBS	NPN	13	4.5			1	20			
2N445A	GT CBS	NPN	13	4.5	600		1	35	70		
2N446	CBS	NPN	13	4.5			1	30	60		
2N446A	GT	NPN	13	4.5	600		1	60	120		
2N447	GT CBS	NPN	13	4.5	600		1	50			
2N447A	GT	NPN	13	4.5	600		1	85	150		
2N448	GE	NPN	12								
2N449	SC	PNP	13								
2N449	GE	NPN	12								
2N450	GE	PNP	11								
2N456	TI RCA	PNP	16	1.5			1A		130		
2N457	TI RCA	PNP	16	1.5			1A		130		
2N458	TI	PNP	16	1.5			1A		130		
2N459	TS	PNP	12 or 16								

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
V _{ce}	I _c mA	db	V _{ce}	I _c mA	P _c mW		
6	1	6	18	200	120		2N413
			15	200	150		2N413A
			15	200	150		2N414
			15	200	150		2N414A
			10	200	150		2N415
			12	200	150		2N416
			10	200	150		2N417
			30		150		2N417A
			16	200	25W		2N418
			45	3A	25W		2N419
			40	5A	25W		2N420
			80	5A	25W		2N420A
			20		150		2N422
			80		45W*		2N424
			18	400	150		2N425
			18	400	150		2N426
			15	400	150		2N427
			12	400	150		2N428
			25		100		2N438
			25		150		2N438A
			20		100		2N439
			20		150		2N439A
			15		100		2N440
			15		150		2N440A
			15	100	100		2N444
4.5	1	12	25		150		2N444A
			12	100	100		2N445
4.5	1	12	18		150		2N445A
			10	100	100		2N446
4.5	1	12	15		150		2N446A
4.5	1	12	6	100	100		2N447
4.5	1	12	12		150		2N447A
			15	20	65		2N448
10.5	1	10	18	50			2N449
			15	20	65		2N449
			12	125	150		2N450
			40	5A	50W*		2N456
			60	5A	50W		2N457
			80	5A	50W		2N458
			60	5A	50W		2N459

*With heat sink.

Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2N464	MR GT	PNP	13	6				1	14	22	33
2N465	MR GT	PNP	13	6				1	27	45	66
2N466	MR GT	PNP	13	6				1	54	90	130
2N467	MR GT	PNP	13	6				1	110	180	260
2N469	RCA GT	NPN	13	4.5				1	10	50	
2N470	TT	NPN	17	6				1	10	16	25
2N471	TT	NPN	17	6				1	10	16	25
2N471A	TT	NPN	17	6				1	10	16	25
2N472	TT	NPN	17	6				1	10	16	25
2N473	TT	NPN	17	6				1	20	30	50
2N474	TT	NPN	17	6				1	20	30	50
2N474A	TT	NPN	17	6				1	20	30	50
2N475	TT	NPN	17	6				1	20	30	50
2N476	TT	NPN	17	6				1	30	45	60
2N477	TT	NPN	17	6				1	30	45	60
2N478	TT	NPN	17	6				1	40	60	100
2N479	TT	NPN	17	6				1	40	60	100
2N479A	TT	NPN	17	6				1	40	60	100
2N480	TT	NPN	17	6				1	40	60	100
2N481	RAY IND	PNP	13								
2N482	RAY IND	PNP	13								
2N483	RAY IND	PNP	13								
2N484	RAY	PNP	13								
2N485	RAY IND	PNP	13								
2N486	RAY IND	PNP	13					1		100	
2N495	SC	PNP	13	6				1	9	15	
2N496	SC	PNP	13	6				1			
2N497	TT TI	NPN	17	(20)				100		4	
2N498	TT TI	NPN	17	(20)				100		4	
2N501	SC	PNP	13	1.5							
2N502	SC	PNP	13	10.5				2		9	
2N503	SC	PNP	13	10.5				2	9	45	
2N506	SYL	PNP	5					10		25	
2N507	SYL	PNP	5					10		25	
2N508	GE TH	PNP	17	4.5				1		112	
2N515	SYL	NPN	5	6				1	5	7.5	15
2N516	SYL	NPN	5	6				1	5	7.5	15
2N517	SYL	NPN	5	6				1	5	7.5	15
2N519	GT	PNP	13					1		15	25
2N519A	GT IND	PNP	13	4.5	600			1	15	25	

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
V _{ce}	I _c mA	db	V _{ce}	I _c mA	P _c mW		
6	1	12	40		150		2N464
6	1	12	30		150		2N455
6	1	12	20		150		2N466
6	1	12	15		150		2N467
			18	50	50		2N469
6	1	22	15		200		2N470
6	1	22	30		200		2N471
6	1	22	30		200		2N471A
6	1	11	45		200		2N472
6	1	20	15		200		2N473
6	1	20	30		200		2N474
6	1	20	30				2N474A
6	1	20	45		200		2N475
6	1	19	15		200		2N476
6	1	19	30		200		2N477
6	1	20	15		200		2N478
6	1	20	30		200		2N479
6	1	20	30		200		2N479A
			45		200		2N480
			12		150		2N481
			12		100		2N482
			12		100		2N483
			12		150		2N484
			12		100		2N485
			10	200	100		2N486
			25	50	150		2N495
			10	50	150		2N496
			60		2.5W*		2N497
			100		2.5W*		2N498
			12	50	25		2N501
10-5	1	10	20		30		2N502
			15	50	30		2N503
				100	50		2N506
			50	40	50		2N507
4-5	1	6	16	100	140		2N508
			18	10	50		2N515
			18	10	50		2N516
			18	10	50		2N517
			100	15	100		2N519
4-5	1	12	18		150		2N519A

*With heat sink.

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2N520A	GT IND	PNP	13	4.5	600			1	40	100	150
2N521A	GT	PNP	13	4.5	600			1	70	150	
2N522	GT	PNP	13					1	60	120	
2N522A	GT	PNP	13	4.5	600			1	100	200	
2N523	GT IND	PNP	13	4.5				1	80	200	
2N523A	GT IND	PNP	13	4.5	600			1	125	300	
2N524	TH GE	PNP	17	1.5				20		35	
2N525	TH GE SYL	PNP	17	1.5				20		52	
2N526	TH GE	PNP	17	1.5				20		73	
2N527	TH GE	PNP	17	1.5				20		91	
2N529	GT	PNP	13					1	15		
2N530	GT	PNP	13					1	20		
2N534	PCO SC	PNP	24	4.5				1	35	100	
2N535	PCO SC	PNP	24	4.5				1	35	100	200
2N535A	PCO SC	PNP	24	4.5				1	35	100	200
2N535B	PHIL	PNP	10					1	35	100	200
2N541	TT	NPN	17	6				1	80	130	200
2N542	TT	NPN	17	6				1	80	130	200
2N543	TT	NPN	17	6				1	80	130	200
2N544	SYL RCA	PNP	3	(12)				1	20	60	175
2N545	TT	NPN	17	(20)				100		6	
2N546	TT	NPN	17	(20)				100		6	
2N547	TT	NPN	17	(20)				100		4	
2N548	TT	NPN	17	(20)				100		4	
2N548	TI	PNP	16	1.5							
2N549	TT	NPN	17	(20)				100		4	
2N550	TT	NPN	17	(20)				100		4	
2N551	TT	NPN	17	(20)				50		3	
2N552	TT	NPN	14	(20)				50		3	
2N553	DEL	PNP	16					500	40		
2N554	SYL	PNP	16								
2N561	RCA	PNP	16					1A		65	
2N563	GT	PNP	13	4.5	2mA			1		25	
2N564	GT IND	PNP	13	4.5	2mA			1		25	
2N565	GT	PNP	13	4.5	2mA			1		55	
2N566	GT	PNP	13	4.5	2mA			1		15	
2N567	GT	PNP	13	4.5	2mA			1		100	
2N568	GT	PNP	17	4.5	2mA			1		100	
2N569	GT	PNP	13	4.5	2mA			1		150	
2N570	GT	PNP	13	4.5	2mA			1		30	

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
Vce	Ic mA	db	Vce	Ic mA	Pc mW		
4-5	1	12	15		150		2N520A
4-5	1	12	12	200	150		2N521A
			8	200	100		2N522
4-5	1	12	10	200	150		2N522A
			6		100		2N523
4-5	1	12	6	200	150		2N523A
		6	30	500	225		2N524
		6	30	500	225		2N525
		6	30	500	225		2N526
		6	30	500	225		2N527
			15		100		2N529
			5		100		2N530
			50	25	50		2N534
3	0-5	5	20	20	50		2N535
3	0-5	2	20	20	50		2N535A
3	0-5	0 *	20	20	50	*Max	2N535B
6	1	20	15		200		2N541
6	1	20	30		200		2N542
6	1	20	45		200		2N543
			18	10	80		2N544
			60		5W*		2N545
			30		5W*		2N546
			60		5W		2N547
			30		5W*		2N548
			80	5A	5W*		2N548
			60		5W*		2N549
			30		5W*		2N550
			60		3W*		2N551
			30		3W*		2N552
				4A	12W*		2N553
			28	3A	10W*		2N554
				5A	50W*		2N561
			25	300	150		2N563
			25	300	120		2N564
			25	300	150		2N565
			25	300	120		2N566
			25	300	150		2N567
			25	300	120		2N568
			15	300	150		2N569
			15	300	120		2N570

*With heat sink.

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2N571	GT	PNP	13	4.5	2mA			1		30	
2N572	GT	PNP	13	1.5	2mA			1		30	
2N576	SYL	NPN	17								
2N576A	SYL	NPN	17								
2N578	RCA TS	PNP	17 or 13					400		15†	
2N579	RCA TS	PNP	13 or 17					400		30†	
2N580	RCA TS	PNP	17					400		40†	
2N581	RCA TS	PNP	13 or 17					20		30†	
2N582	RCA TS	PNP	13 or 17					20		60†	
2N583	RCA	PNP	13								
2N584	RCA	PNP	13								
2N585	SYL RCA	NPN	17 or 13								
2N586	RCA	PNP	11								
2N587	SYL	NPN	17								
2N591	SYL RCA	PNP	5 or 13	(12)				2		70	300
2N592	TT	PNP	13	4.5				1		25	
2N593	GT	PNP	13	4.5				1		35	
2N594	GT	NPN	13	4.5	600			1		30	
2N595	GT	NPN	13	4.5	600			1		45	
2N596	GT	NPN	13	4.5	600			1		60	
2N597	SC	PNP	13								
2N598	SC	PNP	13	1.5				100	70†	125†	255†
2N599	SC	PNP	13	1.5				100	100†	175†	
2N600	SC	PNP	13	1.5				100	70†	125†	
2N601	SC	PNP	13	1.5				100	100	175	
2N602	GT	PNP	13		1mA						
2N603	GT	PNP	13		1mA						
2N604	GT	PNR	13		1mA						
2N605	GT	PNP	13					1		40	
2N606	GT	PNP	13					1		40	
2N607	GT	PNP	13					1		80	
2N608	GT	PNP	13					1		120	
2N618	MR CL	PNP	16	10.5				1A		60	
2N619	RAY	NPN	13								
2N627	MR	PNP	16	(12)				500		60	
2N628	MR	PNP	16	(12)				500		60	
2N629	MR	PNP	16	(12)				500		60	
2N630	MR	PNP	16	(12)				500		60	
2N631	MR RAY	PNP	13	6	25	50		10		150	
2N632	MR RAY	PNP	13	6	25	50		10		100	

† D.C. current gain.

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
V _{ce}	I _c mA	db	V _{ce}	I _c mA	P _c mW		
			10	300	150		2N571
			10	300	120		2N572
			20	400	200		2N576
			20	400	200		2N576A
			14	400	120		2N578
			14	400	120		2N579
			14	400	120		2N580
			14	100	80		2N581
			14	100	120		2N582
			4	100	80		2N583
			14	100	120		2N584
			20	200	120		2N585
				250	250		2N586
			25	200	150		2N587
			32	20	50		2N591
					150		2N592
					150		2N593
4.5	1	16	20		100		2N594
4.5	1	16	15		100		2N595
4.5	1	16	10		100		2N596
			20	400	250		2N597
			20	400	250		2N598
			20	400	250		2N599
			20	400	500*		2N600
			20	400	500*		2N601
4.5	1	14	20		120		2N602
4.5	1	14	20		120		2N603
4.5	1	14	20		120		2N604
			15		120		2N605
			15		120		2N606
			15		120		2N607
			15		120		2N608
			16	3	45W*		2N618
			50				2N619
			30	10A	50W*		2N627
			45	10A	50W*		2N628
			60	10A	50W*		2N629
			75	10A	50W*		2N630
			20	50	170		2N631
			24	50	150		2N632

*With heat sink.

Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2N637	BEN CL	PNP	16	4.5				500		75	
2N637A	BEN CL	PNP	16	4.5				500		75	
2N637B	BEN CL	PNP	16	4.5				500		75	
2N638	BEN CL	PNP	16	4.5				500		90	
2N638A	BEN CL	PNP	16	4.5				500		90	
2N638B	BEN CL	PNP	16	4.5				500		90	
2N640	RCA	PNP	3	(12)				I		60	
2N641	RCA	PNP	3	(12)				I		60	
2N642	RCA	PNP	3	(12)				I		60	
2N643	RCA	PNP	13								
2N647	RCA	NPN	13	1.5				50		70	
2N649	RCA	NPN	13	1.5				50		65	
2N650	MR	PNP	17	6				I	30	40	70
2N651	MR	PNP	17	6				I	50	75	125
2N652	MR	PNP	17	6				I	100	160	250
2N653	MR	PNP	17	6				I	30	40	70
2N654	MR	PNP	17	6				I	50	75	125
2N655	MR	PNP	17	6				I	100	160	250
2N656	TT TI	NPN	17	(20)				100		4	
2N657	TT TI	NPN	17	(20)				100		4	
2N669	MR	PNP	16	1.5				500		20	50
2N678	BEN	PNP	16	1.5				500		160	
2N678A	BEN	PNP	16	1.5				500		160	
2N678B	BEN	PNP	16	1.5				500		160	
2N678C	BEN	PNP	16	1.5				500		160	
2N679	SYL	NPN	17								
2N695	MR	PNP	9	(15)	75	100					
2N696	FC IND	NPN	13	10.5				150	20†	40†	60†
2N697	FC SYL	NPN	17	10.5				150	40†	75†	
2N700	MR	PNP	9								
2N1000	GT CBS	NPN	13								
2N1008	BEN	PNP	13	4.5				10	40		150
2N1008A	BEN	PNP	13	4.5				10	40		150
2N1008B	BEN	PNP	13	4.5				10	40		150
2N1010	RCA	NPN	13	3				0.3		35	
2N1012	CBS GT	NPN	13	(22)	600						
2N1014	RCA	PNP	16	1.5				1A		75	
2N1024	SP	PNP		(18)							
2N1027	SP	PNP							9		
2N1028	SP	PNP							18		
									9		

† D.C. current gain.

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
V _{ce}	I _c mA	db	V _{ce}	I _c mA	P _c mW		
			40	5A	25W*		2N637
			70	5A	25W*		2N637A
			80	5A	25W*		2N637B
			40	5A	25W*		2N638
			70	5A	25W*		2N638A
			80	5A	25W*		2N638B
				10	80		2N640
				10	80		2N641
				10	80		2N642
			29	100	120		2N643
				50	100		2N647
			18	50	100		2N649
4.5	0.5	10	30		200		2N650
4.5	0.5	10	30	250	200		2N651
4.5	0.5	10	30	250	200		2N652
4.5	0.5	10	25	250	200		2N653
4.5	0.5	10	25	25	200		2N654
4.5	0.5	10	25	250	200		2N655
			60		2.5W*		2N656
			100		2.5W*		2N657
			30	3	10W*		2N669
			30	15A	50W*		2N678
			40	15A	50W*		2N678A
			70	15A	50W*		2N678B
			80	15A	50W*		2N678C
			20	200	150		2N679
			15	50	75		2N695
			40		600		2N696
			40		600		2N697
			20	50	75		2N700
			25		150		2N1000
			20	300	400		2N1008
			40	300	400		2N1008A
			60	300	400		2N1008B
3	0.3	5 max	10	2	20		2N1010
			22		150		2N1012
			60	10A	50W*		2N1014
			15	100			2N1024
			15	100			2N1027
			10	100			2N1028

*With heat sink.

Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2N1030	BEN	PNP	17	3				500		160	
2N1030A	BEN	PNP	17	3				500		160	
2N1030B	BEN	PNP	17	3				500		160	
2N1030C	BEN	PNP	17	3				500		160	
2N1032	BEN	PNP	16	3				500		160	
2N1032A	BEN	PNP	16	3				500		160	
2N1032B	BEN	PNP	16	3				500		160	
2N1032C	BEN	PNP	16	3				500		160	
2N1034	RAY	PNP	13	4-5				3		15	
2N1035	RAY	PNP	13	4-5				3		30	
2N1036	RAY	PNP	13	4-5				3		60	
2N1037	RAY	PNP	13	4-5				3		30	
2N1038	TI	PNP							20	60	
2N1039	TI	PNP							20	60	
2N1040	TI	PNP							20	60	
2N1046	TI	PNP		3				500	40	70	
2N1056	TH GE	PNP	11	1-5				20		32	
2N1057	TH GE	PNP	11	1-5				20		58	
2N1058	SYL	NPN	5	6				1	10		23
2N1059	SYL	NPN	5						50		100
2N1065	GT	PNP	13	(20)	1mA						
2N1067	RCA	NPN	13	(30)	100	1A					
2N1068	RCA	NPN	13	(60)	100	1A					
2N1069	RCA	NPN	16	(45)	200	2A					
2N1073	BEN	PNP	16	3				500		55	
2N1073A	BEN	PNP	16	3				500		55	
2N1073B	BEN	PNP	16	3				500		55	
2N1086	GE	NPN	12								
2N1092	RCA	NPN	13 or 17	(30)	100	1A					
2N1095	BO	NPN	5								
2N1097	GE	PNP	17	4-5				1		55	
2N1098	GE	PNP	17	4-5				1		45	
2N1116	TT	PNP	17	(20)				100		4	
2N1136	BEN	PNP	16	4-5				500		110	
2N1136A	BEN	PNP	16	4-5				500		110	
2N1136B	BEN	PNP	16	4-5				500		110	
2N1137	BEN	PNP	16	4-5				500		160	
2N1137A	BEN	PNP	16	4-5				500		160	
2N1137B	BEN	PNP	16	4-5				500		160	
2N1138	BEN	PNP	16	4-5				500		215	

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
Vce	Ic mA	db	Vce	Ic mA	Pc mW		
			30	15A	50W*		2N1030
			40	15A	50W*		2N1030A
			70	15A	50W*		2N1030B
			80	15A	50W*		2N1030C
			30	15A	50W*		2N1032
			40	15A	50W*		2N1032A
			70	15A	50W*		2N1032B
			80	15A	50W*		2N1032C
4.5	3	30	40				2N1034
4.5	3	30	35				2N1035
4.5	3	30	30				2N1036
4.5	3	15	35				2N1037
			40	1A	800		2N1038
			60	1A	800		2N1039
			80	1	800		2N1040
			80	3A	15W*		2N1046
			60	100	240		2N1056
			30	300	240		2N1057
			18	50	50		2N1058
			15	100	180		2N1059
4.5	1	14	20	100	180		2N1065
			30	500	5W*		2N1067
			30	1.5A	10W*		2N1068
			45	4A	50W*		2N1069
			40	10A	35W*		2N1073
			80	10A			2N1073A
			120	10A			2N1073B
			9	20	65		2N1086
			30	500	2W*		2N1092
			45	25	150		2N1095
			16	100	140		2N1097
			16	100	140		2N1098
			60		5W*		2N1116
			40	6A	37W*		2N1136
			70	6A	37W*		2N1136A
			80	6A	37W*		2N1136B
			40	6A	37W*		2N1137
			70	6A	37W*		2N1137A
			80	6A	37W*		2N1137B
			40	6A	37W*		2N1138

*With heat sink.

[illegible]

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
V _{ce}	I _c mA	db	V _{ce}	I _c mA	P _c mW		
			70	6A	37W*		2N1138A
			80	6A	37W*		2N1138B
			40		1W*		2N1140
			16	100	140		2N1144
			16	100	140		2N1145
				7A			2N1160
				5A	45W*		2N1168
4.5	0.5	10	25	200	175		2N1191
4.5	0.5	10	25	200	175		2N1192
4.5	0.5	10	25	200	175		2N1193
			25	75	65		2N1198
10.5	2	12	20		150		2N1205
			60		1.2W*		2N1206
			60		1.2W*		2N1207
			60		85W*		2N1208
			45		85W*		2N1209
			60		45W		2N1212
			25	100	150		2N1219
			25	100	150		2N1220
6	1	16	25	100	150		2N1221
			25	100	150		2N1222
			25	100	150		2N1223
			25	4A	20W*		2N1245
			25	4A	20W*		2N1246
			12	100	150		2N1300
			12	100	150		2H1301
			90	75	800		2N1335
			90	75	800		2N1336
			90	75	800		2N1337
							AF101
							AF105
			40	2A	5W		B112
			40	15A	50W		B134
			15	300	300		B1022
			18				CK13
			15				CK14
			12				CK16
			10				CK17
6	1	6	20				CK22
							CK25

* With heat sink

Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
CK64	RAY	PNP	6					1		22	
CK65	RAY	PNP	6					1		45	
CK66	RAY	PNP	6					1		90	
CK67	RAY	PNP	6					1		180	
CK754	RAY	PNP	6					1		300	
CTPI104	INT	PNP	16								
CTPI108	INT	PNP	16								
CTPI109	INT	PNP	16								
CTPI111	INT	PNP	16								
EW51	GEC	PNP (PC)	43								
EW53/1	GEC	PNP	43	4.5				1	15		
EW53/2	GEC	PNP	43	4.5				1	30		
EW58/1	GEC	PNP	43	4.5				1	15		
EW58/2	GEC	PNP	43	4.5				1	30		
EW59	GEC	PNP	43	4.5				1	15	30	
GET1	GEC										
GET2	GEC										
GET3	GEC	PNP	24	6	6			1		55	
GET4	GEC	PNP	24	12	6			1		50	
GET5	GEC	PNP	41	3	6			0.5		50	
GET6	GEC	PNP	24	3	6			0.5		50	
GET7	GEC	PNP	42	6	1.5mA			100		40	
GET8	GEC	PNP	42	6	1.5mA						
GET9	GEC	PNP	42	12	1.5mA						
GET15	GEC	PNP								70	
GET16	GEC	PNP								60	
GET20	GEC	PNP								60	
GET102	GEC	PNP	36	6				1	70	110	180
GET103	GEC	PNP	36	6				1	30	55	80
GET104	GEC	PNP	36	6				1	35	55	95
GET105	GEC	PNP	41	4.5				50	30	60	90
GET106	GEC	PNP	36	3				1	30	55	80
GET110	GEC	PNP	41	4.5				50	40	60	90
GET111	GEC	PNP	36	3				1	30	55	80
GET113	GEC	PNP	36	33	1.5mA			1	60	100	160
GET114	GEC	PNP	36	6				1	35	55	95
GET115	GEC	PNP	36	4.5				50	30	60	90
GET116	GEC	PNP	36	4.5				50	30	60	90
GET120	GEC	PNP	36	4.5	15	45		50	40	60	90
GET571	GEC	PNP	42								

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
V _{ce}	I _c mA	db	V _{ce}	I _c mA	P _c mW		
6	1	12	40 30 20 15 10				CK64 CK65 CK66 CK67 CK754
			25 12 12 50 1.3	3A 4A 4A 3A 2.5	1.3W 1.3W 1.3W 1.3W		CTP1104 CTP1108 CTP1109 CTP1111 EW51
			10 10	20 20			EW53/1 EW53/2
4.5	1	12	5	20			EW58/1
4.5	1	12	5 20	20 20			EW58/2 EW59
			15 15	100 75			GET1 GET2
3	0.5	9	6	25	50		GET3
3	0.5	9	15	35	50		GET4
			20	50	200		GET5
3	0.5	6	12 15 30 40 15	50 8A 8A 8A 350	50 600	= CV7008	GET6 GET7 GET8 GET9 GET15
			30 30	350 500	600 600		GET16 GET20
3	0.5	12	30	1A	200		GET102
3	0.5	12	20	250	200	= CV7001	GET103
3	0.5	12	30	250	150	= CV7001	GET104
			40 15 40 60	350 500 1A	330 150 330 200	= CV7008 = CV7009	GET105 GET106 GET110
3	0.5	5	15	250	200		GET111 GET113
3	0.5	7	15 15 20 12 16	1A 350 350 500 12A	200 440 440 440 4W		GET114 GET115 GET116 GET120 GET571

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
GET572	GEC	PNP									
GET573	GEC	PNP									
GET871	GEC	PNP	36	1.5	15	45	25	20	30	65	
GET872	GEC	PNP	36	1.5	40	120	25	30	60	150	
GET873	GEC	PNP	36	6			1	20	35		
GET874	GEC	PNP	36	6			1	40	70	200	
GFT20	TK	PNP	33	3	70	150	1	15	25	45	
GFT21	TK	PNP	33	3	150	300	3	35	150		
GFT25	TK	PNP	33					60	90	120	
GFT31	TK	PNP	38					20		40	
GFT32	TK	PNP	38	6			10	30		70	
GFT34	TK	PNP	38					50	70	100	
GFT43	TK	PNP							70		
GFT44	TK	PNP	33	6		200	0.5	50	100		
GFT45	TK	PNP	33	6		100	0.5	16	40		
GFT2006/30	TK	PNP	16	6		3mA	500		25		
GFT2006/60	TK	PNP	16			3mA	500		25		
GFT2006/90	TK	PNP	16			3mA	500		250		
GFT4012/30	TK	PNP	16	6	6	10					
GFT4012/60	TK	PNP	16	16	6	10					
GT1	BTH	PNP		4.5			1		20		
GT2	BTH	PNP		4.5			1		40		
GT3	BTH	PNP		4.5			1		60		
GT11	BTH	PNP		4.5			1		30		
GT12	BTH	PNP		4.5			1		60		
GT13	BTH	PNP		4.5			1		100		
GT20	GT	PNP		6			1	30	42	50	
GT31	BTH	PNP	11	4.5		350	1	15	20	25	
GT32	BTH	PNP	11	4.5		350	1	25	40	45	
GT33	BTH	PNP	11	4.5		350	1	45	60	100	
GT34	GT	PNP		6			1	10	20	30	
GT34N	GT	PNP			6		1	10	18	34	
GT34S	GT	PNP		6			1	10	20	30	
GT35	GT	NPN		6	1		1	20	50	80	
GT40	BTH	PNP	11	4.5			1		30		
GT41	BTH	PNP	11	4.5		350	1	15	30	60	
GT42	BTH	PNP	11	4.5		350	1	30	60	100	
GT43	BTH	PNP	11	4.5		350	1	50	100	150	
GT74	GT	PNP		6			1	50	75	99	
GT75	GT	PNP		6			1	100		200	

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
Vce	Ic mA	db	Vce	Ic mA	Pc mW		
3	0.5	3.5	32	12A	20W	= CV7042	GET572
			64	12A	20W		GET573
			12	25	55		GET871
			10	25	55		GET872
			10	10	55		GET873
3	0.5	11	10	10	55		GET874
1.5	0.2	4	7.5	10	50		GFT20
1.5	0.2	4	7.5	20	50		GFT21
				20	50		GFT25
				40	150		GFT31
				400	150		GFT32
				400	150		GFT34
				40	30		GFT43
			15	20	25		GFT44
			15	20	25		GFT45
			8	2A	6W		GFT2006/30
			8	2A	6W		GFT2006/60
			8	2A	6W		GFT2006/90
			10	4A	12W		GFT4012/30
			20	4A	12W		GFT4012/60
			9		125		GT1
			9		125		GT2
			9		125		GT3
			9		100		GT11
			9		10		GT12
			9		100		GT13
6	1	16			150		GT20
4.5	1	12	15	100	125		GT31
4.5	1	12	15	100	125		GT32
4.5	1	12	15	100	125		GT33
6	1	16			150		GT34
					150		GT34N
6	1	16			150		GT34S
6	1	16	10		150		GT35
			15		100		GT40
			15	100	100	= CV 7042	GT41
			15	100	100		GT42
			15	100	100		GT43
6	1	12 max			150 max		GT74
6	1	12			150 max		GT75

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
GT82	GT	PNP		6				1	100	200	
GT81	GT	PNP	13 or 11	6				1	50		100
GT109	GT	PNP	17	6				1	80	110	140
GT122	GT	PNP	17	6				1	50	90	
GT123	GT	PNP	17	6				1	30		
GT167	GT	NPN	17	6	600			1		65	
GT222	GT	PNP		6	2			1	10		
GT229	GT	NPN	13	6	2			1	10		
GT422	ST	NPN	16								
GT423	ST	NPN	16								
GT424	ST	NPN	16								
GT425	ST	NPN	16								
GT426	ST	NPN	16								
GT605	GT	PNP	13	6				1		40	
GT606	GT	PNP	13	6				1		60	
GT607	GT	PNP	13	6				1		80	
GT608	GT	PNP	13	6				1		120	
GT758	GT	PNP	17	6	600			1	10	15	
GT759R	GT	PNP	13	6				1		15	
GT760R	GT	PNP	13	6				1		20	
GT761R	GT	PNP	13	6				1		30	
GT762R	GT	NPN	13	6				1		60	
GT792R	GT	NPN	13								
GT903	GT	NPN	17								
GT904	GT	NPN	17								
GT905	GT	NPN	17								
GT947	GT	NPN	17								
GT948	GT	NPN	17	15	600						
GT948R	GT	NPN	17								
GT949	GT	NPN	17	20	600						
LT11	CBS	PNP	21	(24)				180		40	
LT12	CBS										
LT13	CBS	PNP	21								
LT14	CBS	PNP	21	(24)				180		40	
LT15	CBS	PNP	21								
LT5173	CBS	PNP	16								
MA393	SC	PNP		3				0.5		155	
MFT101	MFD	PNP		6				1	20	30	40
MFT102	MFD	PNP		6				1	40	50	60
MFT103	MFD	PNP		6				1	60	75	100

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
V _{ce}	I _c mA	db	V _{ce}	I _c mA	P _c mW		
6	1	16			150		GT82
6	1	24			125 ^{max}		GT81
6	1	16			125		GT109
6	1	16			150		GT122
6	1	16	15		150		GT123
			20		150		GT167
					125		GT222
					125		GT229
			60	6A	40W *		GT422
			60	6A	40W *		GT423
			60	3A	40W *		GT424
			36	6A	40W *		GT524
			36	3A	40W *		GT426
				15	120		GT605
			15		120		GT606
			15		120		GT607
6	1	16	15		120		GT608
			20		100		GT758
			10		90		GT759R
			10		90		GT760R
			8		90		GT761R
			6		90		GT762R
			10		90		GT792R
6	1	12			150		GT903
					150		GT904
					150		GT905
					150		GT947
			15		150		GT948
			10		90		GT948R
			20		150		GT949
			60	3A	20W *		LT11
			60	3A	20W *		LT12
			60	3A	20W *		LT13
			60	3A	20W *		LT14
					20W *		LT15
			25	4A	20W *		LT5173
			6	50	30		MA393
				50			MFT101
6	0.5	8		50			MFT102
6	0.5	8		50			MFT103

* With heat sink.

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
MFT106	MFD	PNP	1								
MFT107	MFD	PNP	1								
MFT108	MFD	PNP	1								
MFT121	MFD	PNP	1	6				1		30	
MFT122	MFD	PNP	1	6				1		50	
MFT123	MFD	PNP	1	6				1		100	
MN19	MR		17								
N400A	FC	NPN	13								
OC16	PHIL. MULL	PNP	2/9/44	(14)	0.6	2.5mA					45
OC16D	AMP	PNP		7				300		22	
OC16E	AMP	PNP		7				300		30	
OC16G	AMP	PNP		7				300		40	
OC16R	MULL	PNP	16	1.5				1	15		40
OC16T	MULL	PNP	16	1.5				1	30		
OC19	MULL	PNP	16	6	600	2.5mA		300		45†	
OC22	PHIL. MULL	PNP	16	3				400		180	
OC23	PHIL. MULL	PNP	16	3				400		180	
OC26	PHIL	PNP	16	1				1A	20†		60†
OC27	MULL	PNP									
OC28	MULL	PNP	16	1				1A	20†		55†
OC29	MULL	PNP	16	1				1A	45†		130†
OC30	PHIL. MULL	PNP	16	(14)	300	1mA		100		36†	
OC32	INT	PNP	5	1.5				1	9		16
OC33	INT	PNP	5	1.5				1	16		32
OC34	INT	PNP	5	1.5				1	32		
OC35	MULL	PNP	16								
OC36	MULL	PNP	16								
OC37	INT	PNP	5	6		15					
OC38	INT	PNP	5	6		150					
OC41	MULL	PNP	1	(15)	2	10				35	
OC42	MULL	PNP	1	(15)	2	10				70	
OC44	PHIL. MULL	PNP	1	6	25	75		1	40	100	225
OC45	PHIL. MULL	PNP	1	6	12	40		1	25	40	125
OC46	PHIL	PNP	1								
OC47	PHIL	PNP	1								
OC50	MULL PHIL. VAL	PNP (PC)	22								
OC51	MULL PHIL. VAL	PNP (PC)	22								
OC57	PHIL. MULL	PNP	29	1.5		100		0.5	40	50	60
OC58	PHIL. MULL	PNP	29	1.5		100		0.5	50	70	85
OC59	PHIL. MULL	PNP	29	1.5		100		0.5	80	100	120

† D.C. current gain.

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
V _{ce}	I _c mA	db	V _{ce}	I _c mA	P _c mW		
				50	150		MFT106
				50	150		MFT107
				50	150		MFT108
				250	200		MFT121
				250	200		MFT122
				250	200		MFT123
					125		MN19
			30		600		N400A
			16	1.5A	6W		OC16
			13	2A			OC16D
			26	2A			OC16E
			26	2A			OC16G
			32	3A			OC16R
			32	3A			OC16T
			16	1.5	7.5W		OC19
			24	1A	4W		OC22
			24	1A	4W		OC23
			16	3A	12.5W		OC26
			60	6A	12W		OC27
			60	6A	12W	= CV 7085	OC28
			48	6	30W	= CV 7083	OC29
			16	1.4A	900		OC30
1.5	0.5	17	15	50	50		OC32
1.5	0.5	17	15	50	50		OC33
1.5	0.5	17	15	50	50		OC34
			32	6	30W	= CV 7084	OC35
			32	6	30W	= CV 7086	OC36
			30		65		OC37
			9		65		OC38
			16	50	83		OC41
			16	50	43		OC42
			10	5	75	= CV 7003	OC44
			10	5	75	= CV 7004	OC45
4.5	1	25	20	100	100		OC46
4.5	1	25	20	100	100		OC47
4.5	1.5	43	20	20	120		OC50
			20	15	100		OC51
3	0.5	10	3	5	10		OC57
3	0.5	10	3	5	10		OC58
3	0.5	10	3	5	10		OC59

Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
OC60	PHIL. MULL	PNP	29	1.5		120		3		80	
OC65	PHIL MULL. AMP	PNP	1	3		110		0.5	20	30	40
OC66	PHIL MULL. AMP	PNP	1	3		150		3	41	47	
OC70	MULL PHIL. VAL	PNP	1	4.5	110	225		0.5	20	30	40
OC71	MULL PHIL. VAL	PNP	1	3	150	325		3	30	47	75
OC72	PHIL. MULL	PNP	1	6	125	300		8		50	
OC73	PHIL. MULL	PNP	1	4.5	100	200		0.5	30	45	65
OC75	PHIL. MULL	PNP	1	4.5	350	550		3	60	90	130
OC76	PHIL. MULL	PNP	1	6	200	600		80	30†		
OC77	PHIL. MULL	PNP	1	6	200	600		10		45	
OC80	PHIL	PNP	1								
OC139	PHIL. MULL	NPN	1	4.5				3			
OC140	PHIL. MULL	NPN	1								
OC141	PHIL.	NPN	1								
OC169	AMP	PNP	3	6				1		60	
OC171	AMP	PNP	3	6				1	20		100
OC170	PHIL. MULL	PNP	3	6		6		0.9	50	80	200
OC200	MULL	PNP	1	6		1		1	15	20	60
OC201	MULL	PNP	1	6		1		1	20	30	80
OC203	MULL	PNP	1	6				1	10	15	
OC204	MULL	PNP	1	6				1		40	
OC303	INT	PNP	13	4.5				1	16	24	32
OC304	INT	PNP	13	4.5				1	32	70	
OC305	INT	PNP	13	4.5				1	120	150	
OC307	INT	PNP	46	6		300					
OC308	INT	PNP	46	6		300					
OC309	INT	PNP	46	6		300					
OC320	INT	PNP	45	4.5				1	9		16
OC330	INT	PNP	45	4.5		2		1	16	24	32
OC331	INT	PNP		3		100		0.5	20	26	32
OC340	INT	PNP	45	4.5		2		1	32	70	120
OC341	INT	PNP		3		100		0.5	32	41	50
OC342	INT	PNP		3		100		0.5	50	65	80
OC343	INT	PNP		3		100		0.5	80	100	120
OC350	INT	PNP	45	4.5				1	120	150	
OC351	INT	PNP		3		150		0.5	120	170	
OC360	INT	PNP	45	4.5				1	20		
OC361	INT	PNP		3		100		0.5	32	41	50
OC362	INT	PNP		3		100		0.5	50	65	80
OC363	INT	PNP		3		100		0.5	80	100	120

† D.C. current gain

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
V _{ce}	I _c mA	db	V _{ce}	I _c mA	P _c mW		
3	0.5	15 *	3	5	10	*Max.	OC60
3	0.5	9	5	10	25		OC65
3	0.5	9	5	10	25		OC66
3	0.5	10	20	10	125		OC70
3	0.5	10	20	10	125	= CV 7005	OC71
3	0.5	15	16	125	125	= CV 7006	OC72
3	0.5	10	30	10	125		OC73
3	0.5	10	20	10	75		OC75
			32	125	75		OC76
3	0.5	15	60	125	75	= CV 7007	OC77
			32	300	550		OC80
4.5	1	25	20	200	100		OC139
4.5	1	25	20	200	100		OC140
4.5	1	25	20	200			OC141
6	1	4		10	50		OC169
6	1	15	20	10	60		OC171
6	1	18	20	10	60		OC170
3	0.5	8	25	50	250		OC200
3	0.5	6	25	50	250		OC201
3	0.5	8	60	50	250		OC203
			16	125			OC204
1.5	0.5	12	15	50	67		OC303
1.5	0.5	12	15	50	67		OC304
1.5	0.5	12	8	50	67		OC305
			32	250	100		OC307
			32	250	100		OC308
			60	250	100		OC309
1.5	0.5	12	15	35	45		OC320
		12	7	30	45		OC330
							OC331
1.5	0.5	12	15	35	45		OC340
		12	7	30	45		OC341
		12	7	30			OC342
		12	7	30			OC343
1.5	0.5	12	8	35	45		OC350
1.5	0.5	12	5	30			OC351
		5	15	35	45		OC360
		4	7	30			OC361
		4	7	30			OC362
		4	7	30			OC363

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
OC390	INT	PNP	1								
OC400	INT	PNP	1								
OC410	INT	PNP	1								
OC430	BC INT	PNP	46	4.5	0.4	2	1	10	15	20	
OC430K	INT	PNP	46	4.5	0.4	2	1	10	15	20	
OC440	INT. BC	PNP	46	4.5	0.4	2	1	10	15	20	
OC445	INT	PNP	46	6	0.4	2	1	10	15	20	
OC445K	INT	PNP	46	6	0.4	2	1	10	15	20	
OC450	INT	PNP	46	6	0.4	2	1	10	20		
OC450K	INT	PNP	46	6	0.4	2	1	10	20		
OC460	INT	PNP	46	6	0.4	2	1	20	30		
OC460K	INT	PNP	46	6	0.4	2	1	20	30		
OC465	INT	PNP	46	6	0.4	2	1	20	30		
OC465K	INT	PNP	46	6	0.4	2	1	20	30		
OC470	INT	PNP	46	6	0.4	2	1	20	30		
OC470K	INT	PNP	46	6	0.4	2	1	20	30		
OC601	TFN	PNP	1	4.5			1	9			20
OC602	TFN	PNP	1	4.5	125	400	1	20	40		50
OC602Spec	TFN	PNP	1	4.5	150	1mA	1		21		49
OC603	TFN	PNP	1	4.5	225	600	1	20	50		150
OC604	TFN	PNP	1	1.5	350	600	2	50	65		150
OC604Spec	TFN	PNP	1	4.5	300	1.5mA	1		39		165
OC612	TFN	PNP	1	6	80	650	0.5		60		
OC613	TFN	PNP	1	6	100	800	0.5		90		
OC614	TFN	PNP	11	6	3	30	1		70		
OC615	TFN	PNP	11				1		110		
OC622	TFN	PNP	39	1.5	100	400	0.5	21	49		
OC623	TFN	PNP	39	1.5	200	600	2	20	50		150
OC624	TFN	PNP	39	1.5	300	600	2	50	65		165
OD603	TFN	PNP	40	6	250	1mA	0.5		30		
OD604	TFN	PNP	23								
OD613	TFN	PNP	40	6	250	1mA	0.5		30		
OD614	TFN	PNP	23								
OD650	AEG	PNP	51								
OD651	AEG	PNP	51								
OD651A	AEG	PNP	51								
OD652	AEG	PNP	51								
OD750	AEG	NPN	50								
OD751	AEG	NPN	50								
PAT20	TAG	PNP	17	6			1	10	15	20	

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
V _{ce}	I _c mA	db	V _{ce}	I _c mA	P _c mW		
			5		45		OC390
			5		45		OC400
			3		45		OC410
			10	50	330		OC430
			10	50	660		OC430K
			30	50	330		OC440
			30	50	330		OC445
			50	50	660		OC445K
			50	50	330		OC450
			50	50	660		OC450K
			10	50	330		OC460
			10	50	660		OC460K
			20	50	330		OC465
			20	50	660		OC465K
			30	50	330		OC470
			30	50	660		OC470K
	0.2	5	20	20	50		OC601
			20	30	50		OC602
			30	500	100A		OC602Spec
1.5	2	5	20	30	50		OC603
1.5	0.2	15	30	40	50		OC604
			30	500	100		OC604Spec
			15	40	25		OC612
			15		25		OC613
			15		25		OC614
			15		25		OC615
	0.2	5	15	20	25		OC622
	0.2	3	15	20	25		OC623
	0.2	5	15	20	25		OC624
			30	3A	4W		OD603
			27	2A	1.2W		OD604
			30	3A			OD613
							OD614
							OD650
							OD651
							OD651A
							OD652
							OD750
							OD751
6	0.5	8	10	50	250		PAT20

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
V _{ce}	I _c mA	db	V _{ce}	I _c mA	P _c mW		
6	0.5	8	50	50	250		PAT21
6	0.5	8	75	50	250		PAT22
6	0.5	8	10	50	250		PAT23
			50	50	250		PAT24
			25	50			SA495
			10	50			SA496
			4.5	5	10		SB100
			5	5	20		SB101
			5	5	20		SB102
			5	5	20		SB103
3	0.5	12	6	15	30		SB240
			5	5	20		SB344
			5	5	20		SB345
			5	5	20		SB346
			6	15			SB420
			18	50	80		SD22
			18	50	80		SFT106
			18	50	80		SFT107
			30	3A	25W		SFT108
			60	3A	25W		SFT113
			40	10	150		SFT114
			20	10	150		SFT115
			20	10	150		SFT116
			20	10	150		SFT117
			20	10	150		SFT118
			20	10	150		SFT119
			20	10	150		SFT120
			24	250	150		SFT121
			24	250	150		SFT122
			24	250	150		SFT123
			24	500	350		SFT124
			24	500	350		SFT125
			24	250	150		SFT126
			24	250	150		SFT127
			24	250	150		SFT128
			45	250	200		SFT141
			45	250	200		SFT142
			45	500	350		SFT143
			45	500	350		SFT144
			45	750	550		SFT145

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
SFT146	CSF	PNP									
SFT150	CSF	PNP	37	4.5				1		50	
SFT151	CSF	PNP	1	6				1		30	
SFT152	CSF	PNP	1	6				1	20	50	60
SFT153	CSF	PNP	1	6				1	60	80	150
SFT238	CSF										
SFT239	CSF										
SFT240	CSF										
ST9	TT	NPN	13	6				1	30	60	200
ST11	TT	NPN	17	6				1	20	30	50
ST12	TT	NPN	17	6				1	40	60	100
ST14	TT	NPN	17	6				1	80	130	200
ST15	TT	NPN	17	6				1	10	50	100
ST20A	NEC	PNP	13	6				1		85	
ST20AR	NEC	PNP	28	6				1		85	
ST20E	NEC	PNP	13								
ST27A	NEC	PNP	13	6				1		50	
ST27B	NEC	PNP	13	6				1		50	
ST28A	NEC	PNP	13	6				1		50	
ST28B	NEC	PNP	13	6				1		50	
ST28C	NEC	PNP	13	6				1		50	
ST29	TT	NPN	12	6				1	30	60	200
ST29	NEC	PNP	13	6				1	30	50	200
ST31	TT	NPN	17	6				1	20	30	50
ST34	TT	NPN	17	6				1	80	130	200
ST34F	NEC	PNP	13								
ST34FR	NEC	PNP	28								
ST34G	NEC	PNP	13								
ST34GR	NEC	PNP	28								
ST34H	NEC	PNP	13								
ST35	TT	NPN	17	6				1	10	50	100
ST35	NEC	PNP	26	3			100			70	
ST35R	NEC	PNP	26								
ST36	NEC	PNP	16								
ST37C	NEC	PNP	13	6				1		50	
ST37D	NEC	PNP	13	6				1		50	
ST37E	NEC	PNP									
ST41	TT	NPN	17	1.5				1	20	30	50
ST42	TT	NPN	17	6				1	40	60	100
ST44	TT	NPN	17	6				1	80	130	200

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
Vce	Ic mA	db	Vce	Ic mA	Pc mW		
			45	750	550		SFT146
			80	3A	25W *		SFT150
6	0.5	8	24	150	150		SFT151
6	0.5	8	24	150	150		SFT152
6	0.5	8	24	150	150		SFT153
			30	6A	25W *		SFT238
			60	6A	25W *		SFT239
			80	6A	25W *		SFT240
6	1	19	15		150		ST9
6	1	20	15		200		ST11
6	1	20	15		200		ST12
6	1	20	15		200		ST14
6	1	22	15		200		ST15
			18	30	100		ST20A
			18	30	140		ST20AR
			15	30	100		ST20E
				2	20		ST27A
				2	20		ST27B
				2	20		ST28A
				2	20		ST28B
				2	20		ST28C
6	1	9	30		150		ST29
6	1	19		2	20		ST29
6	1	20	30		200		ST31
6	1	20	30		200		ST34
6	1	5		50	125		ST34F
6	1	10		50	180		ST34FR
6	1	10		100	180		ST34G
6	1	10		100	125		ST34GR
6	1	5		50	100		ST34H
6	1	22	30		200		ST35
				200	500		ST35
				200	700		ST35R
				2A	10W *		ST36
				2	20		ST37C
				2	20		ST37D
				50	20		ST37E
6	1	20	25		200		ST41
6	1	20	45		200		ST42
6	1	20	45		200		ST44

*With heat sink.

Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
ST45	TT	NPN	17	6				1	10	50	100
ST400	TT	NPN	34					300		6	
ST401	TT	NPN	34	(30)				300		6	
ST402	TT	NPN	34	(30)				300		6	
ST403	TT	NPN	34	(30)				300		6	
ST903	TT	NPN	5								
ST904	TT	NPN	5								
ST904A	TT	NPN	5							18	
ST905	TT	NPN	5	4-5				1	36	65	90
ST910	TT	NPN	5	4-5				1	76	140	333
ST1026	TT	NPN	17								
ST1050	TT	NPN	17								
ST1051	TT	NPN	17								
ST3020	TT	NPN	17								
ST4150	TT	NPN	17	(20)				100		6	
SX2010	TT										
SYL1279	SYL	NPN	5								
SYL1310	SYL	NPN	17	6				1	5		15
SYL1311	SYL	NPN	17	6				1	5	8	15
SYL1312	SYL	NPN	17	6				1	10	20	30
SYL1313	SYL	NPN	17	6				1	3-5	6	15
SYL1329	SYL	NPN	5	1-5				30	75		150
SYL1430	SYL	PNP	5	6				1	70	100	300
SYL1475	SYL	PNP	9	(15)				2	30		165
SYL1509	SYL	PNP	9	(10-5)				1	20	60	175
SYL1536	SYL	PNP	17	6				1	4	7-5	15
SYL1537	SYL	PNP	17	6				1	5		15
SYL1538	SYL	NPN	17	6				1	50		150
SYL1539	SYL	NPN	17	6				1	30		150
SYL1547	SYL	NPN	5	1-5				35	50	75	100
SYL1549	SYL	PNP	5								
SYL1583	SYL	PNP	5								
SYL1604	SYL	PNP	5								
SYL1608	SYL	PNP	5	6				1	6		15
SYL1621	SYL	PNP	5	6				1	40		
T1025	SC	PNP									
T1159	SC	PNP									
T1166	SC	PNP	14	3				1	40	155	
TF49	SH	PNP	13								
TF65	SH	PNP	13	1-5				2	20		100

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
Vce	Ic mA	db	Vce	Ic mA	Pc mW		
6	1	22	45		208		ST45
			60		85		ST400
			45		85		ST401
			60		50		ST402
			45		50		ST403
4.5	1	25			150		ST903
4.5	1	25			150		ST904
4.5	1	25	30		150		ST904A
4.5	1	25	30		150		ST905
4.5	1	20			150		ST910
			6	5	30		ST1026
			6				ST1050
			6				ST1051
				60	5W		ST3020
							ST4150
			25	100	180		SX2010
			20	50	50		SYL1279
			18	50	50		SYL1310
			18		50		SYL1311
					50		SYL1312
			18	50	50		SYL1313
			15	100	180		SYL1329
			25	100	150		SYL1430
				10	80		SYL1475
				10	80		SYL1509
			18	50	50		SYL1536
			12	100	100		SYL1537
			12	100	100		SYL1538
			12	100	100		SYL1539
			15	100	180		SYL1547
			15	100	180		SYL1549
			10	100			SYL1583
			25	100	180		SYL1604
			12	50	100		SYL1608
			18	50	150		SYL1621
			25	50	150		T1025
			10	50	150		T1159
			6	50	50		T1166
			15	200	25		TF49
			16	50	25		TF65

Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
TF65/30	SH	PNP	13	1.5				20		45	120
TF66	SH	PNP	13							50†	
TF66/30	SH	PNP	13							50†	
TF78	SH	PNP	13							30†	
TF78/30	SH	PNP	13							30†	
TF80/30	SH	PNP	30	1.5			50	25		50	
TF80/60	SH	PNP	30	1.5			50	26		50	
TF80/80	SH	PNP	30	1.5			50	25		50	
TF251	SH	NPN	30	6			2			50	
TF252	SH	NPN		6		2	2			50	
TF260	SH	NPN	13	1.5				10		10†	
THP35	TH	NPN	11								
THP45	TH	PNP		3			500			42	
THP46	TH	PNP		3			500			42	
THP47	TH	PNP		3			500			42	
TJ1	STC	PNP	19	1.5			2	10		20	
TJ2	STC	PNP	19	1.5			2	30		40	
TJ3	STC	PNP	19	1.5			2	50		60	
TJN1	CSF	PNP	5								
TJN1B	CSF	PNP	5								
TJN2	CSF	PNP	5								
TJN2B	CSF	PNP	5								
TJN3	CSF	PNP									
TJN4	CSF	PNP									
TJN300/2	CSF	PNP					100	30			
TJN300/3	CSF	PNP					100	15			
TK20	STC	PNP	47	4.5	28	500	1	20	40	100	
TK20B	STC	PNP	47	4.5	28	500	1	20	43	100	
TK21	STC	PNP	47	10.5	33		1	18	22	35	
TK21B	STC	PNP	47	10.5	33		1	18	25	35	
TK23	STC	PNP	47	10.5	100	350	1	35	50	70	
TK23A	STC	PNP	47	10.5	100	350	1	35	50	70	
TK24	STC	PNP	47	10.5	60		1	18	40	100	
TK24B	STC	PNP	47	10.5	60		1	18	40	100	
TK25	STC	PNP	47	10.5	42	750	1	20	60	150	
TK25B	STC	PNP	47				1		63		
TK26	STC	PNP	47	10.5	120		1	18	22	35	
TK26B	STC	PNP	47	10.5	120		1	18	22	35	
TK27	STC	PNP	47	10.5	120		1	18	40	100	
TK27B	STC	PNP	47	10.5	120		1	18	40	100	

† D.C. current gain.

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
V _{ce}	I _c mA	db	V _{ce}	I _c mA	P _c mW		
			32	50	50		TF65/30
			16	300	50		TF66
			32	300	50		TF66/30
			16	600	500		TF78
			32	600	500		TF78/30
			32	3A	3W		TF80/30
			64	3A	3W		TF80/60
			80	3A	3W		TF80/80
			5	20	10		TF251
			10	20	10		TF252
			100	300	450		TF260
				25			THP35
			7.5	3A	12W		THP45
			15	3A	12W		THP46
			30	3A	12W		THP47
1.5	0.2	15		50	200		TJ1
1.5	0.2	25		50	200		TJ2
1.5	0.2	15		50	200		TJ3
			25	50	50		TJN1
			25	50	50		TJN1B
			25	50	50		TJN2
			25	50	50		TJN2B
							TJN3
							TJN4
							TJN300/2
				2.5A	4W		
				2.5A	4W		TJN300/3
4.5	0.5	4.5	12		200		TK20
4.5	0.5	4.5	12		200		TK20B
4.5	0.5	8	20		200		TK21
4.5	0.5	8	20		200		TK21B
3	0.5	6	30		200		TK23A
3	0.5	6	30		200		TK23
4.5	0.5	8	20		200		TK24
4.5	0.5	8	20		200		TK24B
	0.3	4					TK25
			6		200		TK25B
4.5	0.5	8	20		200		TK26
4.5	0.5	8	20		200		TK26B
4.5	0.5	8	20		200		TK27
4.5	0.5	8	20		200		TK27B

Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
TK28	STC	PNP	47								
TK28B	STC	PNP	47								
TK30	STC	PNP		10.5	28	400		1	20		100
TK31	STC	PNP		10.5	42	600		1	20		150
TK40	STC	PNP	47	10.5	117	1 mA		1	60	90	200
TK40A	STC	PNP	47	10.5				1	60	90	200
TK41	STC	PNP		10.5		200			20		50
TK42	STC	PNP		10.5		600			45		150
TK70	STC	NPN	47	10.5		5		3	30	50	
TK70A	STC	NPN	47	10.5				3	30	50	
TK71	STC	NPN	47	10.5	3			3	10	30	
TK71A	STC	NPN	47	10.5				3	10	30	
TK72	STC	NPN	47	10.5				3	10		
TK72A	STC	NPN	47	10.5				3	10		
TMI	HIV	PNP	1								
TP1	STC	(PNP) PC	20					0.5	2		
TP2	STC	(PNP) PC	20					75	2		5
TR-C44	IND	PNP	13	6				1			
TR-C45	IND	PNP	13	10.5				1			
TR-C70	IND	PNP	13	10.5				0.5		30	
TR-C71	IND	PNP	13	10.5				3		60	
TR-C72	IND	PNP	13	(12)				10		100	
TR-C72M	IND	PNP	13	(12)				10		100	
TS1	STC	PNP	4	1.5				2	10	20	
TS2	STC	PNP	4	1.5				2	30	40	
TS3	STC	PNP	4	1.5				2	50	60	
TS4	STC	PNP	4	1.5				20	10	20	
TS7	STC	PNP	4	4.5	23	600		1	20	45	100
TS8	STC	PNP	4	4.5	45	900		1	20	60	150
TS9	STC	PNP	4	10.5				10		70	
TS13	STC	PNP	4	10.5	120	630		1	40	60	90
TS14	STC	PNP	4	10.5	70	315		1	20	35	45
TS15	STC	PNP	4	10.5	77	350		1	20	35	50
TS17	STC	PNP	4	10.5	135			1		90	
TS176	TS	PNP	16	(12)				500	30	50	
TS748	TS	PNP									
TS627	TS	PNP	13							90	
TS629	TS	PNP	13							95	
TS672A	TS	PNP	13							45	
TS672B	TS	PNP	13							45	

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
Vce	Ic mA	db	Vce	Ic mA	Pc mW		
			25		200		TK28
			25		200		TK28B
4.5	0.5	25					TK30
	0.5	6	20		200		TK31
4.5	0.5	6	20		200		TK40
							TK40A
							TK41
							TK42
							TK70
							TK70A
			15		325		
					325		
			25		325		TK71
			25		325		TK71A
			12		325		TK72
			12		325		TK72A
			30		50		TM1
			50	30	150		TPI
			50	30	150		TP2
			10				TR-C44
			12				TR-C45
			12				TR-C70
			12				TR-C71
			16				TR-C72
			16				TR-C72M
1.5	2	15		50	50		TS1
1.5	2	15		50	50		TS2
1.5	2	15		50	50		TS3
			30	50	50		TS4
			12		70		TS7
			6		70		TS8
			28		130		TS9
4.5	5	12	20		70		TS13
4.5	5	12	20		70		TS14
	5	12	45				TS15
			18		130		TS17
			30	2A	10W		TS176
							TS748
			18	400	200		TS627
			25	406	200		TS629
			12	200	130		TS672A
			12	200	130		TS672B

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
TS673A	TS	PNP	13							45	
TS673B	TS									45	
TS1007	TS									110	
V6/2R	NM	PNP	5	4.5			1	10		30	50
V6/2RC	NM	PNP	4	4.5			1	10		30	50
V6/4R	NM	PNP	5	4.5			1	30		50	100
V6/4RC	NM	PNP	4	4.5			1	30		50	100
V6/8R	NM	PNP	5	4.5			1	50		80	200
V6/8RC	NM	PNP	4	4.5			1	50		80	200
V6/R2	NM	PNP	5	4.5			1	10		25	50
V6/R4	NM	PNP	5	4.5			1	30		50	100
V6/R8	NM	PNP	5	4.5			1	50		80	200
V10/1S	NM	PNP	5	1.5			20	20		40	100
V10/1SC	NM	PNP	4	1.5				20		40	100
V10/2S	NM	PNP	5								
V10/2SC	NM	PNP	4								
V10/15A	NM	PNP	5	4.5			1	50		75	125
V10/15AC	NM	PNP	4	4.5			1	15		20	30
V10/25	NM	PNP		1.5			10			25	
V10/30A	NM	PNP	5	4.5			1	30		40	50
V10/30AC	NM	PNP	4	4.5			1	30		40	50
V10/50A	NM	PNP	5	4.5			1	50		75	125
V10/50B	NM	PNP	5	4.5			1	50		75	125
V15/10P	NM	PNP	7 or 18	1.5			200	10		18	20
V15/15NP	NM	PNP	8	1.5			200	15		25	30
V15/201P	NM	PNP	6	1.5			20	20		40	100
V15/20R	NM	PNP	9	4.5			1	10		25	50
V15/20P	NM	PNP	7 or 18	1.5			200	20		24	30
V15/30NP	NM	PNP	16	1.5			200	30		40	60
V15/30P	NM	PNP	7 or 18	1.5			200	30		38	
V20/20P	NM	PNP	7 or 18	1.5			200	20		24	30
V20/30P	NM	PNP	7 or 18	1.5			200	20		38	
V30/10P	NM	PNP	7 or 18	1.5			200	10		18	20
V30/15NP	NM	PNP	8	1.5			200	15		25	30
V30/201P	NM	PNP	6	1.5			20	20		40	100
V30/20P	NM	PNP	7 or 18	1.5			200	20		24	30
V30/30NP	NM	PNP	8	1.5			200	30		40	60
V30/30P	NM	PNP	7 or 18	1.5			200	30		38	
V60/10P	NM	PNP	7 or 18	1.5			200	18		20	
V60/20P	NM	PNP	7 or 18	1.5			200	20		24	30

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
Vce	Ic mA	db	Vce	Ic mA	Pc mW		
			12	200	130		TS673A
			12	200	130		TS673B
			12	400	200		TS1007
			6	30	125		V6/2R
			6	30	125		V6/2RC
			6	30	125		V6/4R
			6	30	125		V6/4RC
			6	30	125		V6/8R
			6	30	125		V6/8RC
			6	12	25		V6/R2
			6	12	25		V6/R4
			6	12	25		V6/R8
			10	500	125		V10/1S
			10	500	125		V10/1SC
			10	500	125		V10/2S
			10	500	125		V10/2SC
4-5	1	16	10	30	200		V10/15A
1-5	0-5	12	10	30	200		V10/15AC
			20	500			V10/2S
4-5	1	16	10	30	200		V10/30A
4-5	1	16	10	30	200		V10/30AC
			10	30	200		V10/50A
4-5	1	16	10	30	100		V10/50B
			15	3A	1W		V15/10P
			15	6A	1-5W		V15/15NP
			30	2A	500		V15/201P
			15	12	25		V15/20R
			15	3A	1W		V15/20P
					1-5W		V15/30NP
			15	3A	1W		V15/30P
			30	3A	1W		V20/20P
			30	6A	1-5W		V20/30P
			30	2A	500		V30/10P
							V30/15NP
							V30/201P
			30	3A	1W		V30/20P
			30	6A	1-5W		V30/30NP
			30	3A	1W		V30/30P
			60	3A	1W		V60/10P
			60	3A	1W		V60/20P

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
V60/201P	NM	PNP	6	1.5			200	20	40		100
V60/30P	NM	PNP	7 or 18	1.5			200	30	38		
X110	BEN	PNP	16								
X113	BEN	PNP		(28)		1 mA					
XA101	ES	PNP	1	4.5		70	1	20	35		
XA102	ES	PNP	1	4.5		70	1	25	60		
XA103	ES	PNP	1	4.5		150	1	15	35		
XA104	ES	PNP	1	4.5		150	1	18	60		
XA111	ES	PNP	13	4.5		70	1		35		
XA112	ES	PNP	13	4.5		70	1		60		
XA124	ES	PNP	3	10.5			1		60		
XA126	ES	PNP	3	10.5			1		60		
XA131	ES	PNP	3	10.5			1.5		60		
XA141	ES	PNP	13	6			5		45†		
XA142	ES	PNP	13	6			5		45†		
XA143	ES	PNP	13	6			5		45†		
XB102	ES	PNP	1	4.5		250	1	18	30		47
XB103	ES	PNP	1	4.5		250	1	40	66		105
XB104	ES	PNP	1	4.5		250	1	18	30		47
XB112	ES	PNP	13	4.5		250	1	18			47
XB113	ES	PNP	13	4.5		250	1	40			105
XB114	ES	PNP	13	4.5		250	1	18			47
XC101	ES	PNP	1	6		250	8				66
XC111	ES	PNP	13	6		250	8				66
XC121	ES	PNP	13	(12)		250					
XC131	ES	PNP	13	(12)		250					
XC143	ES	PNP	16	1.5			700		62		
XC142	ES	PNP	16	1.5			700		62		
XC155	ES	PNP	16	1.5			900		65		
XC156	ES	PNP	16	1.5			900		65		
XFT2	HIV	PNP	1	3			0.5		49		
XN102	MR	PNP									
XN102B	MR	PNP		(12)			100				
XS101	ES	PNP	1	4.5		70	1	10	20		
XS111	ES	PNP	13	4.5		70	1	10	20		
Y400J1	ES	NPN	13	6		70	1		30		
V400J2	ES	NPN	13	6		70	1		75		

† D.C. current gain.

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
Vce	Ic mA	db	Vce	Ic mA	Pc mW		
			60	2A	2W		V60/20IP
			60	3A	1W		V60/30P
			40	3A	10W		X110
					10W		X113
			10		60		XA101
			16		60		XA102
			12		60		XA103
			12		60		XA104
			10		60		XA111
			10		60		XA112
				10	40		XA124
				10	40		XA126
				10	120		XA131
			29	100	120		XA141
			29	100	120		XA142
			29	100	120		XA143
3	0.5	6	16		90		XB102
3	0.5	6	16		90		XB103
3	0.5	6	16		60		XB104
3	0.5	6	16		90		XB112
3	0.5	6	16		90		XB113
3	0.5	6	16		30		XB114
			16		100		XC101
			16		100		XC111
			16				XC121
			16		300		XC131
			16	1.5A	11W		XC143
			16	1.5A	11W		XC142
			50	5A	50W		XC155
			60	5A	10W		XC156
3	0.5	16	12	10	50		XFT2
			25	500	3W		XN102
			25	500			XN102B
			12		90		XS101
			12				XS111
			16		100		Y400J1
			16		100		Y400J2

Warning : Reduce base current to zero before connecting transistor

APPENDIX I—TEST DATA FOR CV TRANSISTORS

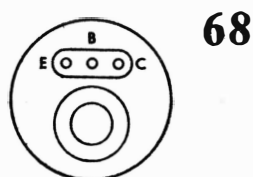
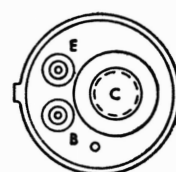
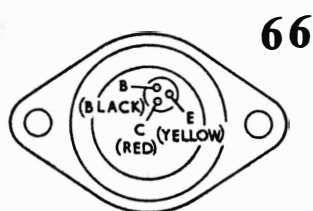
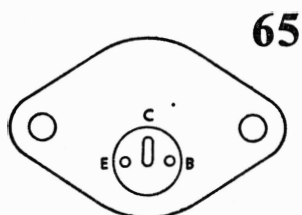
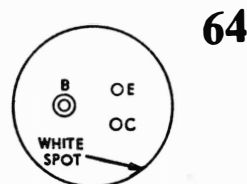
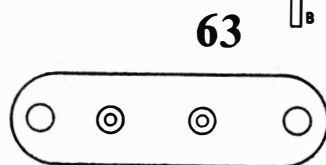
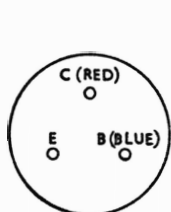
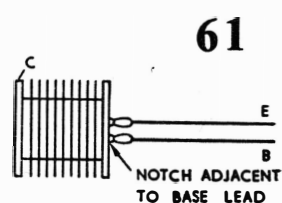
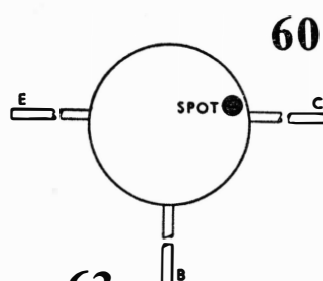
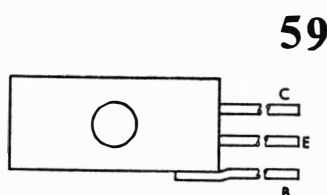
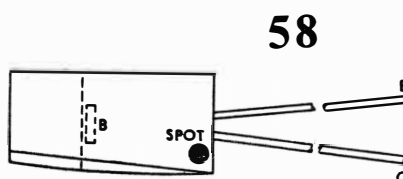
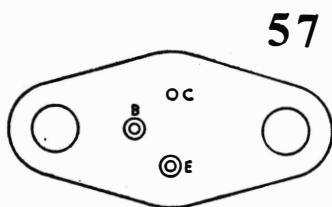
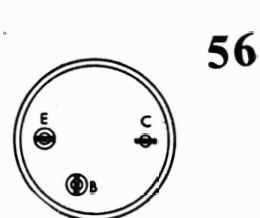
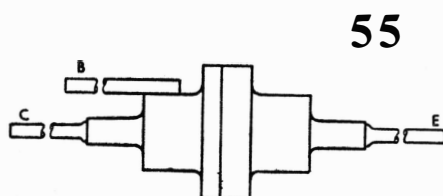
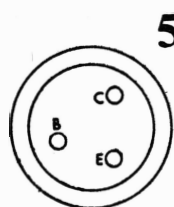
TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
CV2389		PNP	1	6				1	30		70
CV7001		PNP	1 or 29	6				1	40		100
CV7002		PNP	1 or 29	6				10	40		100
CV7003		PNP	1 or 29	6				1	40		180
CV7004		PNP	1 or 29	6				1	25		125
CV7005		PNP	1 or 29	6				1	30		70
CV7006		PNP	1 or 29					80	30		90
CV7007		PNP	or 13						30		
CV7008		PNP	1 or 29	1.5				1	40		100
CV7009		PNP	1 or 29								
CV7011		PNP	7					200		38	
CV7012		PNP	7					200		38	
CV7042		PNP	1 or 13								
CV7043		PNP	1 or 29	6				1	15		60
CV7044		PNP	1 or 29	6				1	20		80
CV7056		NPN	17	4.5				1	18		41
CV7057		NPN	17	4.5				1	18		41
CV7058		NPN	17	4.5				1	34		90
CV7059		NPN	17	4.5				10	45†		150†
CV7060		NPN	17	4.5				10	20†		55†
CV7083		PNP	16								
CV7084		PNP	16								
CV7085		PNP	16								
CV7086		PNP	16								

† D.C. current gain

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
Vce	Ic mA	db	Vce	Ic mA	Pc mW		
1.5	0.5	18 *	10	10	25		CV2389
		16 *		75	80		CV7001
			30	350	200		CV7002
1.5	0.5	22 *		5	27		CV7003
1.5	0.5	22 *	15	10	27		CV7004
1.5	0.5	16 *		10	50		CV7005
1.5	0.5	16 *	16	125	50		CV7006
1.5	0.5	16 *	15	125	75		CV7007
1.5	0.5	6 *	15	75	50		CV7008
			30	500	300		CV7009
				3A	1W		CV7011
				3A	1W		CV7012
			15	60	45		CV7042
1.5	0.5	16	25	15	250		CV7043
1.5	0.5	12	25	50	250		CV7044
4.5	1	30 *		25	150		CV7056
4.5	1	30 *		25	150		CV7057
4.5	1	30 *		25	150		CV7058
				20	150		CV7059
				20	150		CV7060
				6A	750		CV7083
				6A	750		CV7084
				6A	750		CV7085
				6A	750		CV7086

* Maximum noise

DIAGRAM OF TRANSISTOR CONNECTIONS



STOP PRESS

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Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2G101	TIL	PNP	17	6				2		20	
2G102	TIL	PNP	17	6				2		20	
2G104	TIL	PNP	17								
2G110	TIL	PNP	17	6				2	8†	20†	25†
2G220	TIL	PNP	16								
2G221	TIL	PNP	16								
2G222	TIL	PNP	16								
2G223	TIL	PNP	16	1.5				10		60	
2G224	TIL	PNP	16								
2G225	TIL	PNP	16								
2G226	TIL	PNP	16								
2G227	TIL	PNP	16								
2G228	TIL	PNP	16								
2G229	TIL	PNP	16								
2G230	TIL	PNP	16								
2G231	TIL	PNP	16								
2G240	TIL	PNP	16	1.5				500		70†	
2N22	WE	PNP (PC)	22							1.9	
2N23	WE	PNP (PC)	58							1.9	
2N24	WE	PNP (PC)	22							2.2	
2N25	WE	PNP (PC)	22							2.5	
2N26	WE	PNP (PC)	58								
2N29	WE	NPN		4.5				1		49	
2N30	GE	PNP (PC)	59							2.0	
2N33	RCA	PNP (PC)	5								
2N34	SYL GEM	PNP	5	6				1		75	
2N35	SYL GEM	NPN		6				1		75	
2N43	GE TH GT	PNP	11	4.5				1	30	42	
2N43A	GE GT	PNP	11	4.5				1	30	42	
2N44	GE TH GT	PNP	11	4.5				1		25	66
2N44A	GET GT	PNP		4.5				1		31	
2N45	GT	PNP	11	4.5				1		12	
2N47	PCO	PNP	24	10						40	
2N48	PCO	PNP	24							33	
2N49	PCO	PNP	24							40	
2N50	CLE	PNP (PC)	22							2	
2N51	CLE	PNP (PC)							2.2		
2N52	CLE	PNP (PC)	22								
2N53	CLE	PNP (PC)	22								
2N54	WES	PNP	60							33	

† D.C. current gain

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
Vce	Ic mA	db	Vce	Ic mA	Pc mW		
		4	15	10	60		2G101
			15	10	60		2G102
				50	150		2G104
			15	50	250		2G110
			40	10A	80W		2G220
			60	10A	80W		2G221
			80	10A	80W		2G222
			40	15A	80W		2G223
			60	15A	80W		2G224
			80	15A	80W		2G225
			40	20A	80W		2G226
			60	20A	80W		2G227
			80	20A	80W		2G228
			40	25A	80W		2G229
			60	25A	80W		2G230
			80	25A	80W		2G231
			80	3A	15W		SG240
			40	20	145		2N22
			40	40	105		2N23
			20	20	145		2N24
			20	30	200		2N25
		30 *	40	40	90		2N26
				100	120		2N29
				7	100		2N30
				7	30		2N33
6	1	18	25	100	50		2N34
				100	150		2N35
4-5	1	6	30	300	240		2N43
4-5	1	6		300	240		2N43A
4-5	1	6	30	300	240		2N44
				50	155		2N44A
		22 *		50	150		2N45
		25 *		20	50		2N47
		25 *		20	50		2N48
		15 *		20	50		2N49
			50	8	100		2N50
				8	100		2N51
				8	100		2N52
				8	100		2N53
				10	200		2N54

* Maximum noise

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2N55	WES	PNP	60							18	
2N56	WES	PNP	60							12	
2N57	MH	PNP	26								
2N59	WES	PNP	13	10.5				100		90†	
2N59A	WES	PNP	13	10.5				100		90†	
2N59B	WES	PNP	13	10.5				100		90†	
2N59C	WES	PNP	13	10.5				100		90†	
2N60	WES	PNP	13	10.5				100		65†	
2N60A	WES	PNP	13	10.5				100		65†	
2N60B	WES	PNP	13	10.5				100		65†	
2N60C	WES	PNP	13	10.5				100		65†	
2N61	WES	PNP	13	10.5				100		45†	
2N61A	WES	PNP	13	10.5				100		45†	
2N61B	WES	PNP	13	10.5				100		45†	
2N61C	WES	PNP	13	10.5				100		45†	
2N62	PCO	PNP	60							40	
2N67	WE	PNP (PC)									
2N68	SYL GEM	PNP	11	6				50		40†	
2N71	WES	PNP	61								
2N73	WES	PNP	60								
2N74	WES	PNP	60								
2N75	WES	PNP	60								
2N77	RCA	PNP	13	4.5				0.7		55	
2N78	GE	NPN	11	1.5				1		90	
2N79	RCA	PNP	3							46	
2N80	CBS	PNP	1							80	
2N94	SYL GEM	NPN	5	6				1		32	
2N94A	SYL GEM	NPN	5	6				1	19	49	
2N95	SYL GEM	NPN	11	6				0.5		40	
2N97	GPC BO	NPN	5							14	
2N97A	GPC	NPN	5							14	
2N98	GPC BO	NPN	5							40	
2N98A	GPC	NPN	5							40	
2N99	GPC	NPN	5							40	
2N100	GPC BO	NPN	5							150	
2N101	SYL GEM	PNP	32					500	10†	40†	
2N102	SYL	NPN	1	6				0.5		40†	
2N103	GPC BO	NPN	5							4	
2N104	RCA	PNP	11	6				1		44	
2N105	RCA	PNP		4.5				0.7		55	

† D.C. current gain

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
V _{ce}	I _c mA	db	V _{ce}	I _c mA	P _c mW		
				10	200		2N55
				10	200		2N56
				800	20W		2N57
			20	200	180		2N59
			20	200	180		2N59A
			20	200	180		2N59B
			20	200	180		2N59C
			20	200	180		2N60
			20	200	180		2N60A
			20	200	180		2N60B
			20	200	180		2N60C
			20	200	180		2N61
				200	180		2N61A
			20	200	180		2N61B
			20	200	180		2N61C
	15			20	50		2N62
				50	100		2N67
				1.5A	2W		2N68
			50	250	1W		2N71
			50		200		2N73
			50		200		2N74
			50		200		2N75
1.5	0.5	12		15	35		2N77
		10	10	25	65		2N78
				50	35		2N79
				8	50		2N80
		15		50	50		2N94
		15		50	50		2N94A
				1.5A	2.5W		2N95
4.5	1	20	30	10	50		2N97
				10	50		2N97A
4.5	1	15	48	10	50		2N98
		20		10	50		2N98A
		15			50		2N99
4.5	1	20	25	5	25		2N100
			15	1.5A	1W		2N101
				1.5A	1W		2N102
4.5	1	22	35	10	50		2N103
		12 *		70	150		2N104
		17		15	60		2N105

* Maximum noise

Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2N107	GE	PNP	1							18	
2N108	CBS	PNP									
2N109	RCA GEM SYL	PNP	11	1.5				50		75	
2N110	WE	PNP (PC)	5							140	
2N111	RAY	PNP	5							25	
2N111A	RAY	PNP	5							25	
2N112	RAY	PNP	5							30	
2N112A	RAY	PNP	5							30	
2N114	RAY	PNP	5							30	
2N117	TI TT	NPN	5	4.5				1	9	15	20
2N118	TI TT	NPN	5	4.5				1	18	29	40
2N118A	TI TT	NPN	5	4.5				1	18	54	90
2N119	TI TT	NPN	5	4.5				1	36	63	90
2N120	TI TT	NPN	5						76		333
2N122	TI	NPN									
2N123	GE IND SYL	PNP	17	4.5				1		65	
2N124	TI	NPN	5								24
2N125	TI	NPN	5								48
2N126	TI	NPN	5								100
2N127	TI	NPN	5								200
2N128	PCO SC	PNP	24							33	
2N129	PCO SC	PNP	24							21	
2N130	RAY	PNP	48							22	
2N131	RAY	PNP	48							45	
2N132	RAY	PNP	48							90	
2N133	RAY	PNP	48						25		
2N135	TH	PNP	11	4.5				1		20	
2N136	TH	PNP	11	4.5				1		40	
2N137	TH	PNP	11	4.5				1		60	
2N138	RAY	PNP	48							140	
2N138A	RAY	PNP	48							140	
2N139	RCA GEM SYL	PNP	11	10.5				1		48	
2N144/13	SYL	NPN									
2N145	TI	NPN	5								
2N146	TI	NPN	5								
2N147	TI	NPN	5								
2N148	TI	NPN	5								
2N148A	TI	NPN	5								

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
Vce	Ic mA	db	Vce	Ic mA	Pc mW		
		22		10			2N107
				15	50		2N108
			25	70	150		2N109
				50	200		2N110
		25	15	200			2N111
			15	200			2N111A
		25 *	15	200			2N112
			15	200			2N112A
		25 *	15	25	150		2N114
4.5	1	20		25	150		2N117
4.5	1	20 *		25	150		2N118
4.5	1	25		25	150		2N118A
		20		25	150		2N119
		25		25	15		2N120
				140			2N122
			15	125	100		2N123
		7		8	50		2N124
		7		8	50		2N125
		7		8	50		2N126
		7		8	50		2N127
		20 *	4.5	5	30		2N128
		20 *	4.5	5	30		2N129
		25 *		10			2N130
		22 *		10			2N131
		20 *		10			2N132
		6 *		10			2N133
			12	50	100		2N135
			12	50	100		2N136
			6	50	100		2N137
				20	50		2N138
				20	50		2N138A
				15	80		2N139
				800			2N144/13
			20	5	65		2N145
			20	5	65		2N146
			20	5	65		2N147
			20	5	65		2N148
			32	5	65		2N148A

* Maximum Noise.

Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2N149	TI	NPN	5								
2N149A	TI	NPN	5								
2N150	TI	NPN	5								
2N150A	TI	NPN	5								
2N157	CBS	PNP	16	3			500	20†			
2N157A	CBS	PNP	16	3			500	20†			
2N159	SPR	PNP (PC)	5								
2N162	GPC BO	NPN	5						40		
2N162A	GPC	NPN	5						40		
2N167A	GE	NPN	12	1.5			8	17†	30†	90†	
2N172	TI	NPN	5								
2N173	DEL TS	PNP	25						120		
2N174	DEL TS	PNP	25								
2N174A	DEL TS	PNP	25								
2N178	MR	PNP	16	3			500	15†		45†	
2N179	MR	PNP	16								
2N214MP	GEM	NPN									
2N224	SC PCO	PNP	24	6			100	60†	90†	120	
2N225	SC PCO	PNP	24	6			100	60†	90†	120†	
2N226	SC PCO	PNP	24				100	35†	60†	105†	
2N227	SC PCO	PNP	24				100	35†	60†	105†	
2N230	MALL	PNP							83		
2N234	BEN	PNP	16								
2N235B	BEN CBS GEM CLE SYL	PNP	16	4.5			500		35		
2N236	BEN SYL	PNP	16	1.5			1A		35†		
2N236A	BEN SYL	PNP	16	6			250		100		
2N237	NAC	PNP	5						70		
2N238	TI	PNP	5								
2N243	TI	NPN	5					9	16	32	
2N248	TI	PNP	5						20		
2N251	TI	PNP	16	1.5			500	30	90		
2N252	TI	PNP	5						30		
2N253	TI	PNP	5						10		
2N254	TI	NPN	5						15		
2N255A	CBS	PNP		1.5			500		30†		
2N256	CBS BEN	PNP	16	3			500	30†	40†	50†	
2N256A	CBS	PNP	16	3			500	30†			
2N266	GE	PNP	1						24		
2N267	RCA	PNP	13						66		

† D.C. current gain

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
Vce	Ic mA	db	Vce	Ic mA	Pc mW		
			16	5	65		2N149
			32	5	65		2N149A
			16	5	65		2N150
			32	5	65		2N150A
			60	3A	8.5W		2N157
			90	3A	8.5W		2N157A
				10	80		2N159
	25		40	25	150		2N162
	25			25	150		2N162A
			30	75	65		2N167A
			16	5	65		2N172
				13A	40W		2N173
			50	13A	40W		2N174
			70	15A	30W		2N174A
			30	3A	10W		2N178
				60			2N179
				100	180		2N214MP
			25	150	250		2N224
			25	150	250		2N225
			30	150	250		2N226
			30	150	250		2N227
			30	2A	15W		2N230
				3A	24W		2N234
			40	3A	25W		2N235B
				3A	25W		2N236
			40	3A	25W		2N236A
	10 *			20	150		2N237
			20	100	50		2N238
				60	750		2N243
			25	5	30		2N248
			60	2A	12W		2N251
			16	5	30		2N252
6	0.5	17	12	5	65		2N253
6	0.5	17	20	5	65		2N254
				3A			2N255A
			30	3A	1.5W		2N256
				3A			2N256A
			18	200	75		2N266
	8			10	35		2N267

* Maximum Noise.

Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2N268A	CLE BEN	PNP	16						20		
2N277	DEL TS	PNP	25								
2N278	DEL TS	PNP	25								
2N281	AMP	PNP	1							70	
2N282	AMP MULL	PNP	1							70	
2N284	AMP	PNP	1	1.5				125	25	45	
2N284A	AMP	PNP	1	1.5				125	25	45	
2N285	BEN	PNP	16								
2N285A	BEN SYL	PNP	16	6				250		200	
2N290	DEL	PNP	25							72	
2N291	TI	PNP	5							45	
2N297	CLE BEN CBS	PNP	16								
2N299	PCO	PNP	13								
2N308	TI	PNP	5								
2N309	TI	PNP	5								
2N310	TI	PNP	5								
2N312	MR CBS GT	NPN	13	4.5	250			10	25		75
2N317	SYL GT IND	PNP	13						20†		60†
2N326	CBS	NPN	16	3				500	30†		
2N332A	GE	NPN		4.5	60			1		16	
2N333A	GE	NPN		4.5	60			1		30	
2N334A	GE	NPN		4.5	60			1		38	
2N335A	GE	NPN		4.5	60			1	52		
2N336A	GE	NPN		4.5	60			1		95	
2N342A	TI TT	NPN		10.5				5	9†	20†	32†
2N345	PCO SC	PNP	24	3				0.5	25	35	110
2N346	PCO SC	PNP	24	3				0.5	10	20	
2N353	PCO	PNP							40		150
2N360	IND RAY	PNP	13	6	10	20	50			100	
2N361	IND RAY	PNP	13	6	10	20	50			70	
2N362	IND RAY	PNP	13	6	25	50	1			100	
2N363	IND RAY	PNP	13	6	25	50	1			50	
2N377	ST SYL CBS	NPN	13								
2N377A	SYL ST	NPN	17								
2N378	TS	PNP	16	(20)	100						
2N379	TS	PNP	16	(20)	100						
2N380	TS	PNP	16	(20)	100						
2N381	TS SYL	PNP	13	1.5				20		50	

† D.C. current gain

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS-ISTOR
Vce	Ic mA	db	Vce	Ic mA	Pc mW		
			60		10W		2N268A
			40	12A	55W		2N277
			45	12A	55W		2N278
		15 *	16	50	167		2N281
		15 *	16	125	165		2N282
3	0.5	15 *	32	125	167		2N284
3	0.5	15 *	60	125	167		2N284A
				3A	25W		2N285
			40	3A	25W		2N285A
				12A	55W		2N290
			25	200	180		2N291
							2N297
		5	4.5	5	20		2N299
			20	5	30		2N308
			20	5	30		2N309
			30	5	30		2N310
			15	200	75		2N312
			12	500	110		2N317
			30	2A	7W		2N326
			45	25	500		2N332A
			45	25	500		2N333A
			45	25	500		2N334A
			45	25	500		2N335A
			45	25	500		2N336A
				60	1W		2N342A
			5	5	20		2N345
			5	5	20		2N346
			40	2A	10W		2N353
			20	200	150		2N360
			30	200	150		2N361
			20	100	150		2N362
			40	100	150		2N363
			20	200	150		2N377
					150		2N377A
			20	5A	50W		2N378
			40	5A	5W		2N379
			30	5A	50W		2N380
			25	200	200		2N381

* Maximum noise

Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2N382	TS SYL	PNP	13	1.5				20		75	
2N384	RCA MFD	PNP	31							60	
2N385A	ST	NPN	17								
2N386	PCO SC	PNP	66								
2N387	PCO SC	PNP									
2N388A	ST	NPN	17								
2N391	DEL	PNP									
2N392	DEL	PNP	16	3				1A		200†	
2N396A	IND	PNP									
2N402	WES	PNP	13	10.5				1		25	
2N403	WES	PNP	13	10.5				1		33	
2N414B	IND	PNP	13	6				1		60	
2N415A	RAY TS	PNP	13							80	
2N428	RAY	PNP	13							80	
2N441	DEL TS	PNP	25 or 16								
2N442	DEL TS	PNP	25 or 16								
2N443	DEL TS	PNP	25 or 16								
2N451	GE	NPN		10.5				1A	10†		
2N452	GE	NPN									
2N453	GE	NPN		(20)				1A	20†	30†	
2N454	GE	NPN		(20)				1A	8†	15†	
2N460	TS	PNP	17	4.5				1	21	25	32
2N461	TS MR	PNP	17	4.5				1	30	48	68
2N462	PCO SC	PNP	32								
2N463	WE	PNP	55						20		60
2N467	IND MR	PNP	13	6				1	112	180	
2N468	CBS	NPN		1.5				1A	15†		80†
2N480A	TT	NPN						1		60	
2N499	PCO SPR	PNP	17	10.5				3	8.5		
2N501A	SC PCO SPR	PNP	17	0.6							
N2502A	PCO SC	PNP	17	10.5				2	9	45	
2N504	SC PCO SPR	PNP	17	(12)				1		16	
2N505	MR	PNP		1.5				10		40	

† D.C. current gain.

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
Vce	Ic mA	db	Vce	Ic mA	Pc mW		
			25	200	200		2N382
			30	10	120		2N384
			40	200	150		2N385A
			60	3A	12.5W		2N386
			80	3A	12.5W		2N387
			40	200	150		2N388A
				5A			2N391
				1A			2N392
				200	150		2N396A
			20	150	180		2N402
			20	200	180		2N403
			16	400	200		2N414B
		10	15	200			2N415A
			12	400	150		2N428
			40	13A	55W		2N441
			45	13A	55W		2N442
			50	13A	55W		2N443
			65	5A	85W		2N451
			65	5A	85W		2N452
				2A	85W		2N453
				2A	85W		2N454
4.5	0.5	9	10	400	200		2N460
10.5	1	9	10	400	200		2N461
			35	200	150		2N462
			60	5A	37W		2N463
			15	200	150		2N467
				3A			2N468
					200		2N480A
			30	18	30		2N499
				50	25		2N501A
		5 *			30		2N502A
			25	50	30		2N504
		18 *		250	125		2N505

* Maximum Noise

Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2N506	SYL	PNP	5						25		50
2N507	SYL	NPN	5						25		50
2N509	WE	PNP	13							50	
2N511	TI	PNP									
2N512	TI	PNP									
2N512A	TI	PNP									
2N512B	TI	PNP									
2N513	TI	PNP									
2N513A	TI	PNP									
2N513B	TI	PNP									
2N514	TI	PNP									
2N514A	TI	PNP									
2N514B	TI	PNP									
2N518	GE	PNP		1.5			10		60		
2N520	UST GT IND	PNP	13	4.5			1	20	40		
2N521	GT IND	PNP	13	4.5			1	35	70		
2N528	WE	PNP		1.5			50		20		
2N531	GT	NPN/PNP	13	1.5			1	25			30
2N532	GT	NPN/PNP	13	1.5			1	30			35
2N533	GT	NPN/PNP	13	1.5			1	35			40
2N536	PCO SC	PNP	24	1.5			30	100†	150†		
2N537	WE	PNP		10.5			10		20		
2N538	MH	PNP	27								
2N538A	MH	PNP	27								
2N539	MH	PNP	27								
2N539A	MH	PNP	27								
2N540	MH	PNP	27								
2N540A	MH	PNP	27								
2N555	MR	PNP	16					1A	30†		100†
2N556	SYL CBS	NPN	17								
2N557	SYL	NPN	17					20			
2N558	SYL CBS	NPN	17								
2N559	WE	PNP						25			
2N560	WE	NPN	13	4.5			10		50		
2N564	ING GT	PNP	13				1	10†		30†	
2N574	MH	PNP	56								
2N574A	MH	PNP	56								
2N575	MH	PNP	56								
2N575A	MH	PNP	56								

† D.C. current gain

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
V _{ce}	I _c mA	db	V _{ce}	I _c mA	P _c mW		
				100	50		2N506
				100	50		2N507
				40			2N509
			40	10A	80W		2N511
			40	15A	80W		2N512
			60	15A	80W		2N512A
			80	15A	80W		2N512B
			40	20A	80W		2N513
			60	20A	80W		2N513A
			80	20A	80W		2N513B
			40	25A	80W		2N514
			60	25A	80W		2N514A
			80	25A	80W		2N514B
			12	125	150		2N518
4-5	1	10	12	200	100		2N520
4-5	1	10	10	200	100		2N521
							2N528
6	1	14	15	100	100		2N531
6	1	14	15	100	100		2N532
6	1	14	15	100	100		2N533
			20	30	50		2N536
				100	225		2N537
				3-5A	20W		2N538
				3-5A			2N538A
				3-5A	20W		2N539
				3-5A	20W		2N539A
				3-5A	20W		2N540
				3-5A	20W		2N540A
			30	3A	10W		2N555
			20	200	100		2N556
			20	200	100		2N557
			10	200	100		2N558
			15	50			2N559
			60	50	600		2N560
	16 *		25	300	150		2N564
				15A	65W		2N574
				15A	65W		2N574A
				30A	65W		2N575
				15A	65W		2N575A

* Maximum Noise

Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2N576	SYL	NPN	17						20		60
2N588	SC PCO SPR	PNP	17								
2N609	WES	PNP	13	10.5				700		90†	
2N610	WES	PNP	13	10.5				100		65†	
2N611	WES	PNP	13	10.5				100		45†	
2N612	WES	PNP	13	10.5				0.5		34	
2N613	WES	PNP	13	10.5				0.5		33	
2N614	WES	PNP	13	10.5				0.5		45	
2N615	WES	PNP	13	10.5				0.5		75	
2N616	WES	PNP	13	10.5				0.5		28	
2N617	WES	PNP		10.5				0.5		15	
2N620	RAY	NPN	17								
2N621	RAY	NPN	17	1.5				5		50	
2N622	RAY	NPN	13							25	
2N623	TIE	PNP	9	6				2		35	
2N624	SYL	PNP	9								
2N625	SYL	NPN	13	1.5				50	30†	50†	
2N626	ADV	NPN									
2N633	RAY IND	PNP	13	6	25	50		1		60	
2N634	CBS GE	NPN	13								
2N634A	GE	NPN	13								
2N635	CBS	NPN	13								
2N635A	GE	NPN									
2N636	CBS	NPN	13								
2N636A	GE	NPN									
2N639	BEN	PNP	16	6				500		40	
2N639A	BEN	PNP	16	6				500		40	
2N639B	BEN	PNP	16	6				500		40	
2N644	RCA	PNP	13	6				5	20†	45†	
2N645	RCA	PNP	13	6				5	20†	45†	
2N650A	MR	PNP	17	6				1	30	50	70
2N651A	MR	PNP	17	6				1	50	85	120
2N652A	MR	PNP	17	6				1	100	160	225
2N658	RAY	PNP	13						25	50	80
2N659	RAY	PNP	13						40	70	110
2N660	RAY	PNP	13						60	90	150
2N661	RAY	PNP	13						80	120	
2N662	RAY	PNP	13						30	6	
2N663											

† D.C. current gain.

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
Vce	Ic mA	db	Vce	Ic mA	Pc mW		
			20	400	200		2N576
			15	50	30		2N588
			20	200	180		2N609
			20	200	180		2N610
			20	200	180		2N611
			20	150	180		2N612
			20	200	180		2N613
			15	150	125		2N614
			15	100	125		2N615
			15	150	125		2N616
			20	150	125		2N617
	30 *		35	50	380		2N620
	30 *		30	50	250		2N621
	8		30	50	250		2N622
			15		40		2N623
	15 *		20	10	100		2N624
			30	10	2.5W		2N625
				3A			2N626
			20	50	150		2N633
			20	300	150		2N634
				300	150		2N634A
			20	300	150		2N635
				300	150		2N635A
			20	300	150		2N636
				300	150		2N636A
			40	5A	25W		2N639
			70	5A	25W		2N639A
			80	5A	25W		2N639B
			29	100	120		2N644
			29	100	120		2N645
	15 *			500	200		2N650A
	15 *			500	200		2N651A
	15 *			500	200		2N652A
			16	1A			2N658
			14	1A			2N659
			11	1A			2N660
			9	1A			2N661
			11	1A			2N662
							2N663

* Maximum Noise

Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2N665	DEL	PNP	16	3				500	40†		80†
2N670	PCO SC	PNP	17								
2N671	PCO SC	PNP	17								
2N672	PCO SC	PNP	17								
2N673	PCO SC	PNP	17								
2N674	PCO	PNP	17	1.5				1A	40†	100†	250†
2N675	PCO	PNP		1.5				1A	40†	100†	250†
2N676	ADV	PNP	17								
2N677	BEN	PNP	16	3				500		115	
2N677A	BEN GEM	PNP									
2N677B	BEN GEM	PNP									
2N677C	BEN GEM	PNP									
2N680	TI	PNP								35	
2N694	WE	NPN		6				2		20	
2N698	FC	NPN	17	10.5				150	20†		
2N699	FC IND	NPN	17	4.5				1	35		100
2N701	MR		9							30	
2N702	TI NSC	NPN	17	4.5		10		10		20	
2N703	TI NSC	NPN	17	4.5		10		10		40	
2N705	TI MR	PNP	17								
2N706	FC IND	NPN	17	1.5				10	15†		
2N707	FC	NPN	17	1.5				10	9†	12†	
2N710	TI	PNP	17								
2N715	TII TIL	NPN									
2N716	TII TIL	NPN									
2N717	FC	NPN	17	10.5				150	20†		
2N718	FC	NPN	17	10.5				150	40†		120†
2N725	TI	PNP							20†		
2N728	TT	NPN									
2N729	TT	NPN									
2N741	MR	PNP	17	6				5	20		
2N1009	SYL	PNP	17	10.5				10	40		
2N1011	DEL MR BEN	PNP	16								
2N1013	MIN	PNP									
2N1015	WES	NPN		2				500	20†		
2N1015A	WES	NPN		2				500	20†		
2N1015B	WES	NPN		2				500	20†		
2N1015C	WES	NPN		2				500	20†		
2N1015D	WES	NPN		2				500	20†		
2N1015E	WES	NPN		2				500	20†		

† D.C. current gain.

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
Vce	Ic mA	db	Vce	Ic mA	Pc mW		
60† 100†	5	7		1A			2N665
			40	2A	300		2N670
			40	2A	1W		2N671
			25	2A	300		2N672
			25	2A	1W		2N673
			75	2A	300		2N674
				2A			2N675
			75	3A	1W		2N676
			30	1.5A	50W		2N677
				15A			2N677A
				15A			2N677B
				15A			2N677C
				50	150		2N680
				50	100		2N694
			80	50	600		2N698
			80		600		2N699
				75			2N701
			25	50	150		2N702
			25	50	300		2N703
			15	50	150		2N705
			20		300		2N706
			28		300		2N707
			15	50	150		2N710
					500		2N715
					500		2N716
				40	400		2N717
				40	400		2N718
				50	150		2N725
					500		2N728
					500		2N729
6	5	7	15	100	300		2N741
			25	20			2N1009
			40	1A	10W		2N1011
					750		2N1013
			30	5A	150W		2N1015
			60	5A	150W		2N1015A
			100	5A	150W		2N1015B
			150	5A	150W		2N1015C
			200	5A	150W		2N1015D
			250	5A	150W		2N1015E

* Maximum Noise.

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2N1015F	WE	NPN		2				500	20†		
2N1016	WE	NPN		2				500	25†		
2N1016A	WE	NPN		2				500	25†		
2N1016B	WE	NPN		2				500	25†		
2N1016C	WE	NPN		2				500	25†		
2N1016D	WE	NPN		2				500	25†		
2N1016E	WE	NPN		2				500	25†		
2N1016F	WE	NPN		2				500	25†		
2N1017	RAY IND	PNP	13					1	70	100	
2N1021	TI	PNP	16	1.5				500	10†	23†	
2N1022	TI	PNP	16	1.5				500	10†	23†	
2N1025	SP	PNP	17	6				1	9		18
2N1026	SP	PNP	17	6				1	18		36
2N1026A	SP	PNP	17	6				1	36		
2N1029	BEN	PNP	16	3				500		115	
2N1029A	BEN	PNP	16	3				500		115	
2N1029B	BEN	PNP	16	3				500		115	
2N1029C	BEN	PNP	16	3				500		115	
2N1031	BEN	PNP	16	3				500		115	
2N1031A	BEN	PNP	16	3				500		115	
2N1031B	BEN	PNP	16	3				500		115	
2N1031C	BEN	PNP	16	3				500		115	
2N1034	RAY	PNP	17	6				1	9	15	22
2N1035	RAY	PNP	17	6				1	18	30	40
2N1037	RAY	PNP	17	6				1		25	
2N1047	TIL	NPN	68	10.5				200	12†		36†
2N1048	TIL	NPN	68	10.5				200	12†		36†
2N1049	TIL	NPN	68	10.5				200	30†		90†
2N1050	TIL	NPN	68	10.5				200	30†		90†
2N1058	SYL	NPN	5					10			
2N1059	SYL	NPN	5						50		
2N1070	RCA STI	NPN	16	(45)	200	2mA					
2N1076	BO	NPN	5							60	
2N1078	CBS	PNP	50	1.5				500	30†	50†	
2N1087	GE	NPN	12	1.5				1		40†	
2N1090	RCA	NPN	13							50†	
2N1091	RCA	NPN	13							70†	
2N1099	DEL	PNP	25								
2N1100	DEL	PNP	25								
2N1101	SYL	NPN	5 or 12						25	40	50
2N1102	SYL	NPN	5 or 12						25	40	50
2N1114	SYL	NPN	9						40		180
2N1118	GT PCO SC	PNP	17	6	100			1	9	15	

† D.C. current gain

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
V _{ce}	I _c mA	db	V _{ce}	I _c mA	P _c mW		
			300	5A	150W		2N1015F
			30	5A			2N1016
			60	5A			2N1016A
			100	5A			2N1016B
			150	5A			2N1016C
			200	5A			2N1016D
			250	5A			2N1016E
			300	5A			2N1016F
			10	400	150		2N1017
			100	5A	50W		2N1021
			120	5A	50W		2N1022
			35	100	150		2N1025
			35	100	150		2N1026
			35	100	150		2N1026A
			70	1.5A	50W		2N1029
			40	1.5A	50W		2N1029A
			70	1.5	50W		2N1029B
			80	1.5A	50W		2N1029C
			30	1.5A	50W		2N1031
			40	1.5A	50W		2N1031A
			70	1.5A	50W		2N1031B
			80	1.5A	50W		2N1031C
6	1	18	40	50			2N1034
6	1	18	35	50			2N1035
6	1	11	35	50			2N1037
							2N1047
							2N1048
							2N1049
							2N1050
							2N1058
			20	50	50		
			40	100	180		2N1059
			45	4A	50W		2N1070
			30	30	500		2N1076
			45	3A	20W		2N1078
			9	20	54		2N1087
			18	400	120		2N1090
			15	400	120		2N1091
				4A			2N1099
				4A			2N1100
			15	100	180		2N1101
			25	100	180		2N1102
			25	200	150		2N1114
6	1	12	25	50	150		2N1118

Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2N1118A	SC PCO	PNP	17	6				1	15	25	35
2N1119	GT PCO SC	PNP	17								
2N1120	BEN MR	PNP	16								
2N1121	GE	NPN	12							72	
2N1122	SC PCO	PNP	24	3				1	35		
2N1122A	SC PCO	PNP	24	3				1	35		
2N1123	PCO	PNP	13							70	
2N1124	SC PCO	PNP	17	6			10	40	100		
2N1125	SC PCO	PNP	17	1.5			500	50	75	100	
2N1126	SC PCO	PNP	17	6			10	40			
2N1127	SC PCO	PNP	17	6			500	50		150	
2N1128	SC PCO	PNP	17	10.5			2	70	100	150	
2N1129	SC PCO	PNP	17	6			10		190		
2N1130	SC PCO	PNP	17	6			10		160		
2N1131	FC	PNP	17	10.5			150	15†		45†	
2N1132	FC	PNP	17	10.5			150	30†		90†	
2N1139	TT	NPN	17	6			10	20†	40†		
2N1142	TI	PNP	17								
2N1143	TI	PNP	17								
2N1157	MH	PNP	17								
2N1157A	MH	PNP									
2N1159	DEL	PNP	16	3				1A		150†	
2N1160	DEL	PNP	16								
2N1162	MR	PNP	16								
2N1163	MR	PNP	16								
2N1164	MR	PNP	16								
2N1165	MR	PNP	16								
2N1166	MR	PNP	16								
2N1167	MR	PNP	16								
2N1171	RAY	PNP	17						30†		
2N1172	DEL	PNP	57	10.5			100			43	
2N1176	BEN	PNP	13	4.5			10			50	
2N1176A	BEN	PNP	13	4.5			10			50	
2N1176B		PNP	13	4.5			10			50	
2N1177	RCA	PNP								100	
2N1178	RCA	PNP								40	
2N1179	RCA	PNP								80	
2N1180	RCA	PNP								80	

† D.C. current gain.

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
Vce	Ic mA	db	Vce	Ic mA	Pc mW		
			25	50	150		2N1118A
			10	50	150		2N1119
			70	10A	45W		2N1120
			15	20	65		2N1121
			11	50	25		2N1122
			14	50	25		2N1122A
			40	400	750		2N1123
			35	250	300		2N1124
			40	250	300		2N1125
			35	150			2N1126
			40	150			2N1127
			18	150	150		2N1128
			25	250	150		2N1129
				150	150		2N1130
			30	600	600		2N1131
			30	600	600		2N1132
			15		500		2N1139
			40	100	20W		2N1142
			60	100	20W		2N1143
							2N1157
				1A			2N1157A
				1A			2N1159
			35	25A	50W		2N1160
			35	25A	50W		2N1162
							2N1163
			60	25A	50W		2N1164
			60	25A	60W		2N1165
			75	25A	50W		2N1166
			75	25A	50W		2N1167
				400			2N1171
				1A			2N1172
			20	300	300		2N1176
			40	300	300		2N1176A
			60	300	300		2N1176B
				10	80		2N1177
				10	80		2N1178
				10	80		2N1179
				10	80		2N1180

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2N1183	RCA	PNP						400		20†	
2N1183A	RCA	PNP						400		20†	
2N1183B	RCA	PNP						400		20†	
2N1184	RCA	PNP						400		20†	
2N1184A	RCA	PNP						400		20†	
2N1184B	RCA	PNP									
2N1190	SC PCO	NPN	13	1.0	10		20	12†	25†	60†	
2N1196	HA	PNP	17	10.5			2				
2N1197	HA	PNP	17	10.5			2				
2N1199	PCO		13								
2N1202	MH	PNP	27	2			500	40†	86†	120†	
2N1203	MH	PNP	27								
2N1218	SYL	NPN	16	1.5			100	40†		120†	
2N1224	RCA	PNP	17	10.5			1.5		60		
2N1225	RCA	PNP	17	10.5			1.5		60		
2N1226	RCA	PNP	17	10.5			1.5		60		
2N1228	HA	PNP	13	4.5			1	14		32	
2N1229	HA	PNP	13	4.5			1	28		65	
2N1230	HA	PNP	13	4.5			1	14		32	
2N1231	HA	PNP	13	4.5			1	28		65	
2N1232	HA	PNP	13	4.5			1	14		32	
2N1233	HA	PNP	13	4.5			1	28		65	
2N1234	HA	PNP	13				14		32		
2N1238	HA	PNP	55	4.5			1	14		32	
2N1239	HA	PNP	55	4.5			1	28		65	
2N1240	HA	PNP	55	4.5			1	14		32	
2N1241	HA	PNP	55	4.5			1	28		65	
2N1242	HA	PNP	55	4.5			1	14		32	
2N1243	HA	PNP	55	4.5			1	28		65	
2N1244	HA	PNP	55	4.5			1	14		32	
2N1247	TT	NPN	17	3				0.1	70†		
2N1248											
2N1251	SYL	NPN	5	6			1	70	150	250	
2N1252	IND FC	NPN	17	10.5			150	15†	35†	45†	
2N1253	IND FC	NPN	17	10.5			150	20†	45†	90†	
2N1254	HA	PNP	17	10.5			2	10	25		
2N1255	HA	PNP	17	10.5			2	25	55		
2N1256	HA	PNP	17	10.5			2	10	25		
2N1257	HA	PNP	17	10.5			2	25	55		
2N1258	HA	PNP	17	10.5			2	10	25		
2N1259	HA	PNP	17	10.5			2	25	55		
2N1261	MH	PNP	27								

† D.C. current gain.

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
V _{ce}	I _c mA	db	V _{ce}	I _c mA	P _c mW		
				3A	7.5W		2N1183
				3A	7.5W		2N1183A
				3A	7.5W		2N1183B
				3A	7.5W		2N1184
				3A	7.5A		2N1184A
				3A	7.5W		2N1184B
			15	100	100		2N1190
			40		250		2N1196
			40		250		2N1197
				100	100		2N1199
			60	3.5A			2N1202
			70	3.5A			2N1203
			45	2A	6W		2N1218
			40	10	120		2N1224
			40	10	120		2N1225
			60	10	120		2N1226
4.5	1	10	15		400		2N1228
			15		400		2N1229
4.5	1	10	35		400		2N1230
4.5	1	10	35		400		2N1231
4.5	1	10	60		400		2N1232
4.5	1	10	60		400		2N1233
					400		2N1234
4.5	1	10	15		1W		2N1238
4.5	1	10	15		1W		2N1239
4.5	1	10	35		1W		2N1240
4.5	1	10	35		1W		2N1241
4.5	1	10	60		1W		2N1242
4.5	1	10	60		1W		2N1243
4.5	1	10	110		1W		2N1244
			6	5	30		2N1247
3	50uA	6					2N1248
			15	100	150		2N1251
			20		600		2N1252
			20		600		2N1253
10.5	2	10	15		250		2N1254
10.5	2	10	15		250		2N1255
10.5	2	10	30		250		2N1256
10.5	2	10	30		250		2N1257
10.5	2	10	50		250		2N1258
10.5	2	10	50		250		2N1259
			45	3.5A			2N1261

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2N1262	MH	PNP	27								
2N1263	MH	PNP	27								
2N1264	SYL	PNP	3	10.5				1.5	15		
2N1265	SYL	PNP	5	6				1	25	75	
2N1266	SYL	PNP	5	6				1	22	48	
2N1267	PCO SC	NPN	13	10.5	10			2	6	11	18
2N1268	PCO	NPN	17	10.5	10			2		20	
2N1269	PCO	NPN	17	10.5	10			2		50	
2N1270	PCO	NPN	17	10.5	10			2	6	11	18
2N1271	PCO	NPN	17	10.5	10			2	11	20	36
2N1272	PCO	NPN	17	10.5	10			2	28	50	90
2N1273	TI	PNP		1.5				50		50	
2N1274	TI	PNP		1.5			50			50	
2N1275	RAY SP	PNP		6				1		14	
2N1276	GE	NPN	17	4.5				1	9	14	22
2N1277	GE	NPN	17	4.5				1	18	33	44
2N1278	GE	NPN	17	4.5				1	37	66	90
2N1279	GE	NPN	17	4.5				1	76	101	333
2N1280	IND	PNP	17	1			20		40†	60†	
2N1281	IND	PNP	17	1			10		60†	90†	
2N1282	IND	PNP	PNP	1			20		70†	100†	
2N1284	IND	PNP	17	1			10		30†	90†	150†
2N1289	GE	NPN								300	
2N1291	CBS	PNP	16	2			500		30†		
2N1292	CBS	NPN	16	2			500		30†		
2N1293	CBS	PNP	16	2			500		30†		
2N1294	CBS	NPN	16	2			500		30†		
2N1295	CBS	PNP	16	2			500		30†		
2N1296	CBS	NPN	16	2			500		30†		
2N1297	CBS	PNP	16	2			500		30†		
2N1298	CBS	NPN	16	2			500		30†		
2N1299	SYL	NPN	17								
2N1302	TI SYL	NPN	17	1.5			20			50	
2N1303	TI	PNP		1.5			20			50	
2N1304	TI SYL	NPN	17	1.5			20			70	
2N1305	TI	PNP		1.5			20			70	
2N1306	TI SYL	NPN	17	1.5			20			100	
2N1307	TI	PNP		1.5			20			100	
2N1308	TI SYL	NPN	17	1.5			20			150	
2N1309	TI	PNP		1.5			20			150	

† D.C. current gain.

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
V _{ce}	I _c mA	db	V _{ce}	I _c mA	P _c mW		
			45	3.5A			2N1262
			45	3.5A			2N1263
				10	50		2N1264
			10	100	50		2N1265
			10		80		2N1266
			15	100	100		2N1267
			20	100	100		2N1268
			20	100	100		2N1269
			15	100	100		2N1270
			15	100	100		2N1271
			15	100	100		2N1272
				150	150		2N1273
				150	150		2N1274
		30 *		50	250		2N1275
4.5	1	22	30	25	150		2N1276
4.5	1	18	30	25	150		2N1277
4.5	1	15	30	25	150		2N1278
4.5	1	15	30	25	150		2N1279
			16	400	200		2N1280
			12	400	200		2N1281
			6	400	200		2N1282
			15	400	150		2N1284
			15	50	75		2N1289
			30	3A	7W		2N1291
			30	3A	20W		2N1292
			45	3A	20W		2N1293
			45	3A	20W		2N1294
			60	3A	20W		2N1295
			60	3A	20W		2N1296
			80	3A	20W		2N1297
			80	3A	20W		2N1298
			20	200	150		2N1299
			25	300	150		2N1302
				300	150		2N1303
			20	300	150		2N1304
				300	150		2N1305
			15	300	150		2N1306
				300	150		2N1307
			15	300	150		2N1308
				300	150		2N1309

* Maximum Noise.

Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2N1310	GT	NPN	13	6			1			35	
2N1311	GT	NPN	13	6			1			30	
2N1312	GT	NPN	13	6			1			40	
2N1313	TS IND	PNP	17	(15)		1	1	40†			125†
2N1314	AMP PHIL	PNP									
2N1315	AMP	PNP									
2N1316	IND	PNP	17				1	50†			200†
2N1317	IND	PNP	17				1	45†			180†
2N1318	IND	PNP	17				1	40			150†
2N1320	CBS	PNP	50	3			500	30†	50†		
2N1321	CBS	NPN	50	3			500	30†	50†		
2N1322	CBS	PNP	50	3			500	30†	50†		
2N1323	CBS	NPN	50	3			500	30†	50†		
2N1324	CBS	PNP	50	3			500	30†	50†		
2N1325	CBS	NPN	50	3			500	30†	50†		
2N1326	CBS	PNP	50	3			500	30†	50†		
2N1327	CBS	NPN	50	3			500	30†	50†		
2N1328	CBS	PNP	50	3			500	30†	50†		
2N1329	CBS	NPN	50	3			500	30†	50†		
2N1330	CBS	NPN	50	3			500	30†	50†		
2N1331	CBS	PNP	50	3			500	30†	50†		
2N1332	CBS	NPN	50	3			500	30†	50†		
2N1333	CBS	PNP	50	3			500	30†	50†		
2N1334	CBS	NPN	50	3			500	30†	50†		
2N1339	PSI	NPN									
2N1340	PSI	NPN									
2N1341	PSI	NPN									
2N1343	IND	PNP	17				50	15†			
2N1344	IND	PNP	17	1.5			20	60†	90		
2N1345	IND	PNP	17				400	30			100†
2N1346	IND	PNP	17					40	124		250†
2N1347	IND	PNP	17	1.5			10	30†	80		
2N1348	IND	PNP					10	45			
2N1349	IND	PNP					10	50			
2N1350	IND	PNP					10	45			
2N1351	IND	PNP					1	40†	70†	100†	
2N1352	IND	PNP	17	6							
2N1353	UST IND	PNP	13	1.5			10	25†	70†	150†	
2N1354	IND	PNP	13	1.5			10	25†	70†	150†	

† D.C. current gain.

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS-ISTOR
Vce	Ic mA	db	Vce	Ic mA	Pc mW		
6	1	10			120		2N1310
6	1	10			120		2N1311
6	1	10			120		2N1312
			15	400	175		2N1313
				3.5A			2N1314
				3.5A			2N1315
			15	400	200		2N1316
			12	400	200		2N1317
			6	400	200		2N1318
			30	3A	20W		2N1320
			30	3A	20W		2N1321
			45	3A	20W		2N1322
			45	3A	20W		2N1323
			60	3A	20W		2N1324
			60	3A	20W		2N1325
			80	3A	20W		2N1326
			80	3A	20W		2N1327
			45	3A	20W		2N1328
			30	3A	20W		2N1329
			60	3A	20W		2N1330
			60	3A	20W		2N1331
			60	3A	20W		2N1332
			80	3A	20W		2N1333
			80	3A	20W		2N1334
				75	2.8W		2N1339
				75			2N1340
				75	2.8W		2N1341
			16	400	150		2N1343
			10	400	150		2N1344
			8	400	150		2N1345
			10	400	150		2N1346
			12	200	150		2N1347
			12	400	200		2N1348
			15	400	200		2N1349
			20	400	200		2N1350
			18	400	200		2N1351
			20	200	150		2N1352
			10	200	200		2N1353
			15	200	200		2N1354

Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2N1355	IND	PNP	13	1.6				10	30†	80†	150†
2N1356	IND	PNP									
2N1357	IND	PNP	13	1.5				10	40†	85†	150†
2N1358	DEL	PNP	25								
2N1359	MR	PNP	16					1A		55†	
2N1360	MR	PNP	16					1A		90†	
2N1362	MR	PNP	16					1A		55†	
2N1363	MR	PNP	16					1A		90†	
2N1364	MR	PNP	16					1A		55†	
2N1365	MR	PNP	16					1A		90†	
2N1370	TI	PNP		1.5				50		80	
2N1371	TI	PNP		1.5				50		80	
2N1372	TI	PNP		1.5				50		45	
2N1373	TI	PNP		1.5				50		45	
2N1380	TI	PNP		1.5				50		100	
2N1381	TI SYL	PNP	17	1.5				50	30†	100†	300†
2N1382	TI	PNP		1.5				50		80	
2N1383	TI	PNP		1.5				50		50	
2N1385	TI	PNP		10.5				10			
2N1386	RAY	NPN	17							60†	
2N1387	RAY	NPN	17							30†	
2N1388	RAY	NPN	17								
2N1389	RAY	NPN	17								
2N1390	RAY	NPN	17								
2N1395	RCA	PNP		(12)				1.5		90	
2N1396	RCA	PNP		(12)				1.5		90	
2N1397	RCA	PNP		(12)				1.5		90	
2N1408	GT	PNP	13	6				1	10	25	
2N1409	PSI	NPN		10.5				100		45	
2N1410	PSI	NPN		10.5				100		90	
2N1412	DEL	PNP	25								
2N1413	GE	PNP	17	4.5				1		33	
2N1414	GE	PNP	17	4.5				1		44	
2N1415	GE	PNP	17	1.5				1		64	
2N1416	PCO	PNP	24	4.5				2		110	
2N1420	IND FC	NPN	17	10.5				150	100†		300†
2N1428	PCO	PNP	13								
2N1429	PCO	PNP	13								
2N1431	SYL	NPN		1.5				10	75		

† D.C. current gain.

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
Vce	Ic mA	db	Vce	Ic mA	Pc mW		
			20	200	200		2N1355
			20	200	200		2N1356
			15	200	200		2N1357
				15A			2N1358
			40	3A	90		2N1359
			40	3A	90		2N1360
			75	3A	90W		2N1362
			75	3A	90		2N1363
			100	3A	90		2N1364
			100	3A	90		2N1365
				150	150		2N1370
				150	150		2N1371
				200	210		2N1372
				200	250		2N1373
				200	250		2N1380
			25	200	250		2N1381
				200	200		2N1382
				200	200		2N1383
				100	300		2N1385
			25	50			2N1386
			30	50			2N1387
			45	50			2N1388
			50	50			2N1389
			20	50			2N1390
				10	120		2N1395
				10	120		2N1396
6	1	16		10	120		2N1397
					150		2N1408
					840		2N1409
					840		2N1410
				15A			2N1412
4.5	1	6	20	200	200		2N1413
4.5	1	6	20	200	200		2N1414
4.5	1	6	20	200	200		2N1415
			18	150	250		2N1416
			30		600		2N1420
			6	50	100		2N1428
			6	50	100		2N1429
				100	180		2N1431

Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2N1432	SYL	PNP		(16)				2	30		
2N1433	CBS	PNP		3				2		20	
2N1434	CBS	PNP									
2N1435	CBS	PNP									
2N1437	CBS	PNP		3				500	20†	40†	
2N1438	CBS	PNP		3				500	20†	40†	
2N1440	NAT	PNP		6	17			1	9	18	22
2N1441	NAT	PNP		6	17			1	18	30	36
2N1442	NAT	PNP		6	17			1	30	45	65
2N1446	IND	PNP	17	1.5				20	16†	35†	45†
2N1447	IND	PNP	17	1.5				20	35	52†	65
2N1448	IND	PNP	17	1.5				20	50†	70†	90†
2N1449	IND	PNP	17	1.5				20	70†	95†	125†
2N1450	GT	PNP		1.5				10			
2N1451	IND	PNP	17	2				20	20†	45†	65†
2N1452	IND	PNP	17	2				20	30†	60†	90†
2N1468	RAY	NPN									
2N1469	SP	PNP		6				1		36	
2N1471	IND	PNP						1	100		250
2N1472	PCO		13								
2N1473	SYL	NPN	17	1				30		80†	
2N1474	SP	NPN		6				1	12	26	44
2N1474A	SP	PNP		6				1	18	30	44
2N1475	SP	PNP		6				1	36	60	88
2N1476	SP	PNP		6				1	12	24	36
2N1477	SP	PNP		6				1	30	45	66
2N1478	PCO SP	PNP	17	1.5				100	40	70	
2N1479	RCA	PNP	17					200	15†	75†	
2N1480	RCA	NPN	17					200	15†	75†	
2N1481	RCA	NPN	17					200	35†	100†	
2N1482	RCA	NPN	17					200	35†	100†	
2N1483	RCA	NPN						750	15†	75	
2N1484	RCA	NPN						750	15†	75	
2N1485	RCA	NPN						750	35†	100†	
2N1486	RCA	NPN						750	35†	100†	

† D.C. current gain

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
V _{ce}	I _c mA	db	V _{ce}	I _c mA	P _c mW		
				10	80		2N1432
				3.5A			2N1433
				3.5A			2N1434
				3.5A			2N1435
				3A			2N1437
				3A			2N1438
			40	50	400		2N1440
			35	50	400		2N1441
			30	50	400		2N1442
5	1	6	25	400	200		2N1446
6	1	6	25	400	200		2N1447
6	1	6	25	400	200		2N1448
6	1	6	25	400	200		2N1449
				100	120		2N1450
4.5	0.5	9	20	400	200		2N1451
4.5	0.5	9	20	400	200		2N1452
			70	20A	250		2N1468
				100	150		2N1469
			12	200	200		2N1471
			25	100	100		2N1472
			20	400	167		2N1473
			60	100	250		2N1474
			60	100	250		2N1474A
			60	100	250		2N1475
			100	100	250		2N1476
			100	100	250		2N1477
			20	400	250		2N1478
				1.5A	4W		2N1479
				1.5A	4W		2N1480
				1.5A	4W		2N1481
				1.5A	4W		2N1482
				3A	15W		2N1483
				3A	15W		2N1484
				3A	15W		2N1485
				3A	15W		2N1486

Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2N1487	RCA	NPN	16							50†	
2N1488	RCA	NPN	16							50†	
2N1489	RCA	NPN	16							75†	
2N1490	RCA	NPN	16							75†	
2N1499	PCO SC	PNP	13								
2N1500	PCO SC	NPN	17								
2N1501	MH	PNP	27							100	
2N1502	MH	PNP	27							100	
2N1505	PSI										
2N1506	PSI										
2N1515	AMP	PNP									
2N1516	AMP	PNP									
2N1517	AMP	PNP									
2N1529	MR	PNP	16								
2N1530	MR	PNP	16								
2N1531	MR	PNP	16								
2N1532	MR	PNP	16								
2N1533	MR	PNP	16								
2N1534	MR	PNP	16								
2N1535	MR	PNP	16								
2N1536	MR	PNP	16								
2N1537	MR	PNP	16								
2N1538	MR	PNP	16								
2N1539	MR	PNP	16								
2N1540	MR	PNP	16								
2N1541	MR	PNP	16								
2N1542	MR	PNP	16								
2N1543	MR	PNP	16								
2N1544	MR	PNP	16								
2N1545	MR	PNP	16								
2N1546	MR	PNP	16								
2N1547	MR	PNP	16								
2N1548	MR	PNP	16								
2N1549	MR	PNP	16								
2N1550	MR	PNP	16								
2N1551	MR	PNP	16								
2N1552	MR	PNP	16								
2N1553	MR	PNP	16								
2N1554	MR	PNP	16								
2N1555	MR	PNP	16								

† D.C. current gain

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
V _{ce}	I _c mA	db	V _{ce}	I _c mA	P _c mW		
				6A	60W		2N1487
				6A	60W		2N1488
				6A	60W		2N1489
				6A	60W		2N1490
			15	50	25		2N1499
					75		2N1500
			40	3.5A			2N1501
				3.5A			2N1502
							2N1505
							2N1506
	40 *			10	83		2N1515
	33 *			10	83		2N1516
	40 *			100	300		2N1517
			30	5A	90W		2N1529
			45	5A	90W		2N1530
			60	5A	90W		2N1531
			75	5A	90W		2N1532
			90	5A	90W		2N1533
			30	5A	90W		2N1534
			45	5A	90W		2N1535
			60	5A	90W		2N1536
			75	5A	90W		2N1537
			90	5A	90W		2N1538
			30	5A	90W		2N1539
			45	5A	90W		2N1540
			60	5A	90W		2N1541
			75	5A	90W		2N1542
			90	5A	90W		2N1543
			30	5A	90W		2N1544
			45	5A	90W		2N1545
			60	5A	90W		2N1546
			75	5A	90W		2N1547
			90	5A	90W		2N1548
			30	15	90W		2N1549
			45	15	90W		2N1550
			60	15	90W		2N1551
			75	15	90W		2N1552
			30	15	90W		2N1553
			45	15	90W		2N1554
			60	15	90W		2N1555

* Maximum Noise.

Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2N1556	MR	PNP	16								
2N1557	MR	PNP	16								
2N1558	MR	PNP	16								
2N1559	MR	PNP	16								
2N1560	MR	PNP	16								
2N1561	MR	PNP	13								
2N1585	TI	NPN									
2N1613	FC	NPN	17	10.5				1	20†		
2NJ5A	KO	PNP								50	
2NJ8A	KO	PNP								75	
2NJ9A	KO	PNP								70	
2NJ9D	KO	PNP								27	
2S001	TIL	NPN	17						9		20
2S002	TIL	NPN	17						18		41
2S003	TIL	NPN	17						18		41
2S004	TIL	NPN	17						34		91
2S005	TIL	NPN	17						45		150
2S012	TIL	NPN	34				300			10	
2S102A	TIL	NPN	34	(30)			300	20†	30†	50†	
2S013	TIL	NPN	34						10		
2S013A	TIL	NPN	34	(30)			300	15†	30†	50†	
2S014	TIL	NPN	17					45		150	
2S017	TIL	NPN	17				30	12	20	36	
2S018	TIL	NPN	17				30	12	20	36	
2S019	TIL	NPN	17	(30)			30	30	60	90	
2S020	TIL	NPN	17				30	30	60	90	
2S021	TIL	NPN	17	10.5			10	10		40	
2S022	TIL	NPN	17	10.5			10	15		50	
2S023	TIL	NPN	17	10.5			10	30		90	
2S22	TOS	PNP	11								
2S26	TOS	PNP	16								
2S30	KO	PNP	13	10.5				0.6		75	
2S31	KO	PNP	13	10.5				1		50	
2S32	KO	PNP	13	10.5				1		27	
2S33	KO	PNP	13								
2S34	KO	PNP	11								
2S35	KO	PNP	13	10.5				0.6		75	
2S36	KO	PNP	13	10.5				1.0		50	
2S37	KO	PNP	13								
2S38	KO	PNP	11								

† D.C. current gain.

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
Vce	Ic mA	db	Vce	Ic mA	Pc mW		
			75	15	90W		2N1556
			30	15	90W		2N1557
			45	15	90W		2N1558
			60	15	90W		2N1559
			75	15	90W		2N1560
			25	500	250		2N1561
				100	300		2N1585
10.5	0.3	7	40		800		2N1613
				10	35		2N15A
				10	35		2N18A
				50	50		2N19A
				10	50		2N19D
4.5	1	20	40	25	150		2S001
4.5	1	20	40	25	150		2S002
4.5	1	20	40	25	150		2S003
4.5	1	20	40	25	150		2S004
				20	125		2S005
			60	2A	37W		2S012
			70	2A	60W		2S012A
			60	2A	37W		2S013
			60	1.5	60		2S013A
			40	20	125		2S014
			60	200	4W		2S017
			100	200	4W		2S018
			60	200	4W		2S019
			100	200	4W		2S020
			60		300		2S021
			25		300		2S022
			25		300		2S023
			25	300			2S22
			25	1.5A	10W		2S26
			12	10	35		2S30
			12	10	35		2S31
			20	10	50		2S32
			20	50	50		2S33
			20	150	150		2S34
			16	15	35		2S35
			16	15	35		2S36
			35	50	50		2S37
			25	150	150		2S38

Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2S39	KO	PNP	13	4.5				0.5		45	
2S40	KO	PNP	13	6				1		65	
2S41	KO	PNP	16							63	
2S42	KO	PNP	16								
2S43	KO	PNP	31	10.5				1		60	
2S45	TOS	PNP	13	6				1		18	
2S46	TOS	PNP	13	6				1	33		200
2S47	TOS	PNP	13	6				1		67	
2S49	TOS	PNP	13	6				1		66	
2S50	TOS	PNP	13	6				1		49	
2S51	TOS	PNP	13	6				1		130	
2S52	TOS	PNP	13	6				1		47	
2S53	TOS	PNP	13	6				1		48	
2S54	TOS	PNP	13	6				1	33		200
2S56	TOS	PNP	13	1.5				100		50	
2S61	KO	PNP	13	6				1		50	
2S64	KO	PNP	13	6				1		65	
2S65	KO	PNP	13	6				1		65	
2S96	KO	PNP								30	
2S97	KO	PNP								30	
2S98	KO	PNP								30	
2S100	NEC	PNP	13								
2S101	NEC	PNP	13								
2S101	TIL	NPN	17	4.5				10	20		60
2S102	NEC	PNP	13								
2S103	NEC	PNP	13								
2S104	NEC	PNP	13								
2S105	NEC	PNP	26								
2S106	NEC	PNP	26								
2S106	NEC	PNP	26								
2S107	NEC	PNP	16								
2S108	KO	PNP	31	10.5				1		70	
2S109	KO	PNP	31	10.5				1		60	
2S110	KO	PNP	31	10.5				1		60	
2S111	KO	PNP	31	10.5				1		40	
2S112	KO	PNP	31	10.5				1		45	
2S301	KO	PNP	16								
2S301A	KO	PNP	16								
2SA12	HI	PNP	13	6				1		60	
2SA13	HI	PNP	13	6				1		60	
2SA14	HI	PNP		6				1		50	

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
V _{ce}	I _c mA	db	V _{ce}	I _c mA	P _c mW		
			10	2	20		2S39
			25	50	35		2S40
			12	3A	23		2S41
				1.2A	8W		2S42
			35	10	35		2S43
			16	5			2S45
6	1	25	25	50			2S46
6	1	5	25	50			2S47
			16	5			2S49
			16	100			2S50
			16	5			2S51
			16	5			2S52
6	1	10	16	5			2S53
			16	5			2S54
			25	50			2S56
			30	50	100		2S61
			16	20	30		2S64
			30	100	50		2S65
				10	35		2S96
				10	35		2S97
				10	35		2S98
6	1	5		50	100		2S100
6	1	10		50	150		2S101
			25	50	300		2S101
6	1	10		50	180		2S102
6	1	10		100	125		2S103
6	1	10		100	180		2S104
				200	500		2S105
				200	700		2S106
				2A	10W		2S107
			20	10	35		2S108
			20	10	35		2S109
			20	10	35		2S110
			20	10	35		2S111
			20	10	35		2S112
				1.5A	11W		2S301
				1.5A	11W		2S301A
			16	15	80		2SA12
			12	15	80		2SA13
			16	15	80		2SA14

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2SA15	HI	PNP	13	6				1		70	
2SA16	HI	PNP	13	6				0.6		70	
2SA17	HI	PNP	13	6				0.5		150	
2SA18	HI	PNP		6				0.5		150	
2SA37	TOS	PNP		6				1		70	
2SA38	TOS	PNP		6				1		70	
2SA39		PNP		6				1		49	
2SA41	HI	PNP		6				1		45	
2SA42	HI	PNP		6				1		45	
2SA49	TOS	PNP		6				1		70	
2SA50	TOS	PNP		6				1		70	
2SA51	TOS	PNP		6				1		70	
2SA52	TOS	PNP		6				1		70	
2SA53	TOS	PNP		6				1		49	
2SA57	TOS	PNP		10.5				1		80	
2SA58	TOS	PNP		10.5				1		80	
2SA59	TOS	PNP		10.5				1		70	
2SA60	TOS	PNP		6				1		70	
2SA65	TOS	PNP		6				1		70	
2SA66	TOS	PNP		6				1		70	
2SA67	TOS	PNP		6				1		70	
2SA69	TOS	PNP		6				1		60	
2SA70	TOS	PNP		6				1		80	
2SA71	TOS	PNP		6				1			
2SA72	TOS	PNP		6				1		49	
2SA73	TOS	PNP		6				1		49	
2SA74	TOS	PNP		6				5		70	
2SA75	TOS	PNP		3				20		70	
2SA76	TOS	PNP		6				1		70	
2SA77	TOS	PNP		6				1		70	
2SA78	TOS	PNP		6				1		70	
2SA79	TOS	PNP		1.5				100		70	
2SA80	HI	PNP	31	10.5				1		100	
2SA81	HI	PNP	31	10.5				1		80	
2SA82	HI	PNP	31	10.5				1		85	
2SA83	HI	PNP	31	10.5				1	60	60	
2SA84	HI	PNP	31	10.5				1		80	

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
V _{ce}	I _c mA	db	V _{ce}	I _c mA	P _c mW		
			16	15	80		2SA15
				15	80		2SA16
			12	15	80		2SA17
			21	15	80		2SA18
				5	25		2SA37
				5	25		2SA38
				5	25		2SA39
			35	40	250		2SA41
			45	40	250		2SA42
				5	60		2SA49
				24	55		2SA50
				5	60		2SA51
				5	60		2SA52
				6	60		2SA53
				5	55		2SA57
				5	55		2SA58
				5	55		2SA59
				5	55		2SA60
				200	200		2SA65
				200	200		2SA66
				200	200		2SA67
				10	100		2SA69
				10	100		2SA70
				5	100		2SA71
				5	55		2SA72
				5	55		2SA73
				50	125		2SA74
				50	125		2SA75
				5	55		2SA76
				5	55		2SA77
				400	125		2SA78
				200	55		2SA79
			20	10	80		2SA80
			20	10	80		2SA81
			20	10	80		2SA82
			25	10	80		2SA83
			25	10	80		2SA84

Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2SA85	HI	PNP	31	10.5				1		85	
2SA86	HI	PNP		10.5				1		60	
2SA87	HI	PNP		10.5				1.5		100	
2SA88	HI	PNP		10.5				1.5		50	
2SA89	HI	PNP		10.5				1.5		70	
2SA90	HI	PNP		10.5				1.5		60	
2SA92	TOS	PNP		(45)				1		70	
2SA93	TOS	PNP		(45)				1		49	
2SA101	MAT	PNP		6				1		30	
2SA102	MAT	PNP		6				1		40	
2SA103	MAT	PNP		6				1		50	
2SA104	MAT	PNP		6				1		60	
2SA121	SO	PNP	1	6				1	9	24	82
2SA122	SO	PNP	1	6				1	9	24	82
2SA123	SO	PNP	1	6				1	9	24	82
2SA124	SO	PNP	1	6				1	14	32	82
2SA125	SO	PNP	1	6				1	32	49	66
2SA130	MAT	PNP		3				1		80	
2SA131	HIT	PNP		3				1		40	
2SA132	HIT	PNP		3				1		80	
2SA133	HIT	PNP		3				1		50	
2SA134	HIT	PNP		6				1		70	
2SA135	HIT	PNP		6				1		70	
2SA144	MAT	PNP		6				1		100	
2SA145	MAT	PNP		6				1		40	
2SA151	HIT	PNP		3				1		50	
2SA152	HIT	PNP		3				1		55	
2SA175	TOS	PNP		10.5				1		80	
2SB25	TOS	PNP		1.5				1A	34†	60†	110†
2SB26	TOS	PNP		1.5				1A	34†	60†	110†
2SB27	SO	PNP	16								
2SB28	SO	PNP	16								
2SB29	SO	PNP	16								
2SB30	SO	PNP	16								
2SB31	SO	PNP	16								
2SB46	TOS	PNP		6				1		150	
2SB47	TOS	PNP		6				1		150	
2SB48	SO	PNP	17	6				1	21	36	62
2SB49	SO	PNP	17	6				1	38	66	110

† D.C. current gain.

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
Vce	Ic mA	db	Vce	Ic mA	Pc mW		
			25	10	80		2SA85
			45	50	55		2SA86
			30	10	80		2SA87
			30	10	80		2SA88
			30	10	80		2SA89
			30	20	200		2SA90
				5	55		2SA92
				5	55		2SA93
				10	60		2SA101
				10	60		2SA102
				10	60		2SA103
				10	60		2SA104
			15	2	15		2SA121
			15	2	15		2SA122
			15	2	15		2SA123
			15	2	15		2SA124
			15	2	15		2SA125
				10	80		2SA130
				10	80		2SA131
				10	80		2SA132
				10	80		2SA133
				10	80		2SA134
				10	80		2SA135
				15	100		2SA144
				10	100		2SA145
				15	80		2SA151
				15	80		2SA152
				5	55		2SA175
				1.5A			2SB25
				1.5A			2SB26
			15	500	5W		2SB27
			15	500	5W		2SB28
			15	500	5W		2SB29
			15	500	5W		2SB30
			15	500	5W		2SB31
				50	80		2SB46
				50	80		2SB47
6	1	6	16	100	140		2SB48
6	1	6	16	100	140		2SB49

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2SB50	SO	PNP	17	6				1	66	99	142
2SB51	SO	PNP	17	6				1	21	36	62
2SB52	SO	PNP	17	6				1	38	66	110
2SB53	SO	NPN	1	6				1	41	55	66
2SB54	TOS	PNP		6				1		150	
2SB55	TOS	PNP									
2SB56	TOS	PNP									
2SB62	TOS	PNP		1.5				500	30†	60†	125†
2SB63	TOS	PNP		1.5				500	30†	60†	125†
2SB66	HIT	PNP		6				1		60	
2SB67	HIT	PNP		6				1		45	
2SB68	HIT	PNP									
2SB73	HIT	PNP	13	4.5				0.5		70	
2SB74	HIT	PNP		6				1		48	
2SB75	HIT	PNP	13	6				1		55	
2SB76	HIT	PNP	13	6				1		55	
2SB77	HIT	PNP	13	1.5				50		70†	
2SB78	HIT	PNP	13	1.5				50		70†	
2SB80	HIT	PNP	16	1.5				500		70†	
2SB81	HIT	PNP	16	3				100	30†	45†	110†
2SB82	HIT	PNP	16	3				100	22†	40†	110†
2SB83	HIT	PNP	16	1.5				700	30†	70†	120†
2SB84	HIT	PNP	16	1.5				700	30†	70†	120†
2SB85	HIT	PNP	16								
2SB86	HIT	PNP	16								
2SB87	HIT	PNP	16								
2SB89	HIT	PNP									
2SB90	TOS	PNP		6				1		70	
2SB91	TOS	PNP									
2SB94	TOS	PNP	6					1		150	
2SB119	MAT	PNP									
2SB119A	MAT	PNP									
2SB122	TOS	PNP		1.5				1A	34†	60†	110†
2SB123	TOS	PNP									
2SB124	TOS	PNP									
2SB125	TOS	PNP									
2SB126	MAT	PNP									
2SB127	MAT	PNP									
2SB128	MAT	PNP									
2SB128A	MAT	PNP									

† D.C. current gain

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
V _{ce}	I _c mA	db	V _{ce}	I _c mA	P _c mW		
6	1	6	16	100	140		2SB50
6	1	6	20	200	200		2SB51
6	1	6	20	200	200		2SB52
6	1	6	25	250	200		2SB53
				50	125		2SB54
				50	150		2SB55
				50	150		2SB56
				500			2SB62
				500			2SB63
			30	50	100		2SB66
			55	150	350		2SB67
4.5	0.5	4	105	100	50		2SB68
			10	2	20		2SB73
			16	15	80		2SB74
			25	70	150		2BS75
			12	70	150		2SB76
			25	70	150		2SB77
			12	70	150		2SB78
			25	750	4W		2SB80
			18	500	2W		2SB81
			100	500	2W		2SB82
			40	3A	12W		2SB83
			60	3A	12W		2SB84
			40	5A	50W		2SB85
			60	5A	50W		2SB86
			80	5	50W		2SB87
				150	250		2SB89
				5	40		2SB90
				30	40		2SB91
				50	150		2SB94
				3A			2SB119
				3A			2SB119A
				1.5A			2SB122
				5A			2SB123
				15A			2SB124
				15A			2SB125
				3.5A			2SB126
				3.5A			2SB127
				6A			2SB128
				6A			2SB128A

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2SB129	MAT	PNP									
2SB129A	MAT	PNP									
2SB130	MAT	PNP									
2SB140	SO	PNP	16								
2SB141	SO	PNP	16								
2SB142	SO	PNP	16								
2SB143	SO	PNP	16								
2SB144	SO	PNP	16								
2SB145	SO	PNP	16								
2SB146	SO	PNP	16								
2SB148	TOS	PNP									
2SB149	TOS	PNP									
2SB150	TOS	PNP									
2SB153	HIT	PNP		3				1		70	
2SB154	HIT	PNP									
2SB155	HIT	PNP		4.5				1		37	
2SB156	HIT	PNP									
2SB157	MAT	PNP		1.5				0.5		50	
2SB158	MAT	PNP		1.5				0.5		65	
2SB159	MAT	PNP		1.5				0.5		90	
2SB160	MAT	PNP									
2SB170	MAT	PNP		1.5				0.5		30	
2SB171	MAT	PNP		1.5				3		47	
2SB172	MAT	PNP								90	
2SB174	MAT	PNP		6				5		85	
2SB175	MAT	PNP								90	
2SB176	MAT	PNP		6				10		120	
2SB189	TOS	PNP		1.5				100	20†	75†	140†
2SB3041	SO	PNP									
2SB3042	SO	PNP									
2SB3043	SO	PNP									
2SC73	SO	NPN	1	6				1	26	41	82
2SC75	SO	NPN	1	6				1	9	24	82
2SC76	SO	NPN	1	6				1	9	24	82
2SC77	SO	NPN	1	6				1	9	24	82
2SC78	SO	NPN	1	6				1	32	49	66
2SC90	HIT	NPN		6				1			
2SC91	HIT	NPN									

† D.C. current gain

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
V _{ce}	I _c mA	db	V _{ce}	I _c mA	P _c mW		
				6A 6A 1-5A			2SB129 2SB129A 2SB130
			20	1-5A	12W		2SB140
			40	1-5A	12W		2SB141
			30	1A	10W		2SB142
			30	1A	10W		2SB143
			30	1A	10W		2SB144
			30	1A	10W		2SB145
			30	1A	10W		2SB146
				15A			2SB148
				8A			2SB149
			40	40	50		2SB150
				70	150		2SB153
				70	150		2SB154
				300	130		2SB155
				300	450		2SB156
	10 *			10	10		2SB157
	10 *			10	10		2SB158
				10	10		2SB159
	15			10	10		2SB160
				50	125		2SB170
				50	125		2SB171
				250	125		2SB172
	30 *			300	225		2SB174
				50	125		2SB175
	15 *			250	125		2SB176
				250			2SB189
				1A	10W		2SB3041
				1A	10W		2SB3042
				2	15		2SB3043
			15	5	30		2SC73
			15	5	30		2SC75
			15	5	30		2SC76
			15	5	30		2SC77
			15	5	30		2SC78
				400	120		2SC90
				400	120		2SC91

* Maximum Noise.

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2SD61	SO	NPN	1	6				1	32	42	55
2SD62	SO	NPN	1	6				1	32	42	55
2SD63	SO	NPN	1								
2SD64	SO	NPN	1	6				1	46	76	142
2SD65	SO	NPN	1	6				1	25	43	70
2SD66	SO	NPN	1	6				1	14	23	39
2SD75	HIT	NPN		6				1		50	
2SD77	HIT	NPN									
2T64	SO	NPN	1	6				1	46	76	142
2T65	SO	NPN	1	6				1	25	43	70
2T66	SO	NPN	1	6				1	14	23	69
2T69	SO	NPN									
2T73	SO	NPN	1	6				1	26	41	82
2T75	SO	NPN	1	6				1	9	24	82
2T76	SO	NPN	1	6				1	9	24	82
2T77	SO	NPN	1	6				1	9	24	82
2T78	SO	NPN		6				1		45	
2T85	SO	NPN									
2T201	SO	PNP	1	6				1	9	24	82
2T203	SO	PNP	1	6				1	14	32	82
2T204	SO	PNP		6				1		49	
2T205	SO	PNP		6				1		49	
2T205A	SO	PNP	1	6				1	32	49	66
2T311	SO	PNP	17	6				1	31	36	62
2T312	SO	PNP	17	6				1	21	36	62
2T313	SO	PNP	17	6				1	38	66	110
2T314	SO	PNP	17	6				1	38	66	110
2T315	SO	PNP	17	6				1	66	99	142
2T321	SP	PNP	17	6				1	21	36	62
2T322	SO	PNP	17	6				1	21	36	62
2T323	SO	PNP	17	6				1	38	66	110
2T324	SO	PNP	17	6				1	38	66	110
2T383	SO	PNP	17	6				1	41	55	66
2T681	SO	NPN	1	6				1	32	42	55
2T682	SO	NPN	1	6				1	32	42	55
2T3011	SO	PNP	17	1.5				1A	49†	70†	103†

† D.C. current gain.

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
V _{ce}	I _c mA	db	V _{ce}	I _c mA	P _c mW		
6	1	5	12	100	100		2SD61
6	1		12	100	100		2SD62
			20	100	100		2SD63
6	1	8	20	50	50		2SD64
6	1	8	20	50	80		2SD65
6	1	8	20	50	80		2SD66
		20 *		70	100		2SD75
				70	100		2SD77
6	1	8	20	50	80		2T64
6	1	8	20	50	50		2T65
6	1	8	20	50	80		2T66
		15 *		100	100		2T69
			15	5	50		2T73
			15	5	30		2T75
			15	5	50		2T76
			15	5	30		2T77
				5	50		2T78
		12 *		200	200		2T85
			15	2	15		2T201
			15	2	15		2T203
				5	30		2T204
				5	30		2T205
			15	2	15		2T205A
6	1	6	16	100	140		2T311
6	1	6	16	100	140		2T312
6	1	6	16	100	140		2T313
6	1	6	16	100	140		2T314
6	1	6	16	100	140		2T315
6	1	6	20	200	200		2T321
6	1	6	20	200	200		2T322
6	1	6	20	200	200		2T323
6	1	6	20	200	200		2T324
6	1	6	25	250	200		2T383
6	1	5	12	100	100		2T681
			12	100	100		2T682
			20	1.5A	12W		2T3011

* Maximum Noise.

Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
2T3021	SO	PNP	17	1.5				1A	49	70†	103†
2T3030	SO	PNP	16								
2T3031	SO	PNP	16	1.5				1A	20†	32†	47†
2T3032	SO	PNP	16	1.5				1A	32†	50†	75†
2T3033	SO	PNP	16	1.5				1A	51†	80†	121†
2T3041	SO	PNP	16	1.5				1A	20†	32†	47†
2T3042	SO	PNP	16	1.5				1A	32†	50†	75†
2T3043	SO	PNP	16	1.5				1A	51†	80†	121†
200A	TI	NPN	5	6				I	9	12	19
201A	TI	NPN	5	6				I	19	26	49
202A	TI	NPN	5	6				I	45	65	
300	TI	PNP	5	6				I	9	15	19
301	TI	PNP	5	6				I	19	36	49
302	TI	PNP	5	6				I	49	55	
310	TI	PNP	5								
355	TI	PNP	46					1A		30†	
800	TI	NPN									
903	TI	NPN	5	6				I			
904	TI	NPN	5								
904A	TI	NPN	5								
905	TI	NPN	5								
951	TI	NPN	5								
952	TI	NPN	5								
953	TI	NPN	5								
970	TI	NPN	53	(35)				100	3†		
3064	LCT	NPN		4.5				I		13	
3607	LCT	NPN		4.5				I		32	
3609	LCT	NPN		4.5				I		32	

† D.C. current gain.

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
Vce	Ic mA	db	Vce	Ic mA	Pc mW		
			40	1.5A	12W		2T3021
			30	1A	10W		2T3030
			30	1A	10W		2T3031
			30	1A	10W		2T3032
			30	1A	10W		2T3033
			30	1A	10W		2T3041
			30	1A	10W		2T3042
			30	1A	10W		2T3043
6	1	12		50	150		200A
6	1	12		50	150		201A
6	1	9		50	150		202A
3	0.5	25		50	100		300
3	0.5	22		50	100		301
3	0.5	20	20	50	100		302
				50	50		310
				1.6A	12W		355
				5	65		800
6	1	25		25	150		903
6	1	25		25	150		904
6	1	25		25	150		904A
6	1	25		25	150		905
				60	750		951
				50	750		952
				40	750		953
				140	8.7W		970
		30 *		5	50		3604
		30 *		5	50		3607
		30 *		5	50		3609

* Maximum noise

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
AC105	TFN	PNP	1	6							
ADZ11	RAD	PNP	25								
ADZ12	RAD	PNP	25								
AF111	INT	PNP	13								
AF112	INT	PNP	13								
AF113	INT	PNP	13								
AFZ11	MULL	PNP	3	6				1		50	
ASZ15	PHIL	PNP	16	14				30	20†		
ASZ16	PHIL	PNP	16	1.5				1A	45†		130†
ASZ17	PHIL	PNP	16	1.5				1A	25†		75†
ASZ18	PHIL	PNP	16	1.5				1A	30†		110†
ASZ20	MULL	PNP	3	6				1	7		
ASZ23	MULL	PNP	3								
ATZ10	MULL	PNP	1	1.5				2	2.1		
B177	BEN	PNP						500		150	
B178	BEN	PNP						500		40	
B179	BEN	PNP						500		25	
B1085	BEN	PNP									
BCZ10	PHIL	PNP	1	6				1	15	20	60
BCZ11	MULL PHIL	PNP	1	6				1	25	35	60
C101	CRY	PNP	17	6				1		11	
C102	CRY	PNP	17	6				1		15	
C103	CRY	PNP	17	6				1		23	
C112	CRY	PNP	17	6				1		18	
C201	CRY	PNP	17								
C202	CRY	PNP	17	6				1		15	
C301	CRY	PNP	17								
C302	CRY	PNP	17	6				1		15	
C401	CRY	PNP	17	6				1		3	
C402	CRY	PNP	17	6				1		15	
CA2D2	MH	PNP	27								
CB1F4	MH	PNP	27								
CDT1309	CLE	PNP									
CDT1310	CLE	PNP	16	3				250		200†	
CDT1311	CLE	PNP	16	3				250		200†	
CDT1312	CLE	PNP	16	3				250		200†	
CDT1313	CLE	PNP	16	3				250		200†	
CDT1314	CLE	PNP	16								
CDT1315	CLE	PNP	16								

† D.C. current gain

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
V _{ce}	I _c mA	db	V _{ce}	I _c mA	P _c mW		
3	0.5	8	15	10	30		AC105
			40	20A	25W		ADZ11
			60	20A	25W		ADZ12
			15	10	65		AF111
			15	10	65		AF112
			15	10	65		AF113
			12	12	50		AFZ11
			60	6A	30W		ASZ15
			48	6A	30W		ASZ16
			48	6A	30W		ASZ17
			60	6A	30W		ASZ18
			40	15	100		ASZ20
				75			ASZ23
			35	25	15		ATZ10
			30	3A	25W		BI77
			30	3A	25W		BI78
			40	3A	25W		BI79
			120	10A	35W		BI085
			25	50	250		BCZ10
			25	50	250		BCZ11
			20	50	250		CI01
			15	50	250		CI02
			10	50	250		CI03
			25	50	250		CI12
			40	50	250		C201
			12	50	250		C202
			70	50	250		C301
			8	50	250		C302
			40	50	250		C401
3	0.5	6	10	50	250		C402
				3.5A			CA2D2
			30	3.5A			CB1F4
				5A			CDT1309
			20	5A	45W *		CDT1310
			35	5A	45W *		CDT1311
			45	5A	45W *		CDT1312
			55	5A	45W *		CDT1313
				8A			CDT1314
				8A			CDT1315

* With heat sink.

Warning : Reduce base current to zero before connecting transistor

TRANSISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
CDT1319	CLE	PNP	16	3				500		53†	
CDT1320	CLE	PNP	16	3				500		53†	
CDT1321	CLE	PNP	16	3				500		53†	
CDT1322	CLE	PNP	16	3				500		53†	
CK4	RAY	PNP	62	1.5				2		60	
CK26	RAY	PNP	62								
CK27	RAY	PNP	62								
CK28	RAY	PNP	62								
CK870	RAY	PNP		6				1		12	
CK871	RAY	PNP		6				1		20	
CK914	RAY	PNP	13	6				1	33		360
CK942	RAY	PNP		6				1		25	
CST1739	CLE	PNP	63								
CST1740	CLE	PNP	63								
CST1741	CLE	PNP	63								
CST1742	CLE	PNP	63								
CST1743	CLE	PNP	63								
CST1744	CLE	PNP	63								
CST1745	CLE	PNP	63								
CST1746	CLE	PNP	63								
CTP1112	CLE	PNP	16								
CTP1117	CLE	PNP	16					1A		100†	
CTP1127	CLE	PNP	16								
CTP1133	CLE	PNP	16					500		40†	
CTP1137	CLE	PNP	16					500		75†	
CTP1222	CLE	PNP									
CTP1265	CLE	PNP	16								
CTP1266	CLE	PNP	16								
CTP1296	CLE	PNP	16								
CTP1297	CLE	PNP	16								
CTP1306	CLE	PNP	16								
CTP1307	CLE	PNP	16								
CTP1500	CLE	PNP									
CTP1053	CLE	PNP									
CTP1504	CLE	PNP									
CTP1506	CLE	PNP									
CTP1508	CLE	PNP									
CTP1511	CLE	PNP	16	1.5							
CTP1512	CLE	PNP	16								
CTP1513	CLE	PNP	16								

† D.C. current gain

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
Vce	Ic mA	db	Vce	Ic mA	Pc mW		
3	0.5	23 * 30 *	20	5A	45W *	* Max. * Max.	CDT1319
			35	5A	45W *		CDT1320
			45	5A	45W *		CDT1321
			55	5A	45W *		CDT1322
			24	100	80		CK4
			18	400	80		CK26
			15	400	80		CK27
			12	400	80		CK28
				150	130		CK870
				150	130		CK871
				50	250		CK914
			20	3A	12W		CK942
			20	3A	12W		CST1739
			20	3A	12W		CST1740
							CST1741
			20	3A	12W		CST1742
			20	3A	12W		CST1743
			40	3A	12W		CST1744
			40	3A	12W		CST1745
			40	3A	12W		CST1746
			75	3A			CTP1112
			40	3A	40W		CTP1117
			60				CTP1127
			40		40W		CTP1133
			40				CTP1137
				5A			CTP1222
				8A			CTP1265
				8A			CTP1266
				8A			CTP1296
				8A			CTP1297
				8A			CTP1306
				8A			CTP1307
				13A			CTP1500
				13A			CTP1503
				13A			CTP1504
				13A			CTP1506
				13A			CTP1508
				13A	65W		CTP1511
				13A	65W		CTP1512
				13A	65W		CTP1513

* With heat sink.

Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
CTPI514	CLE	PNP	16								
CTPI530	CLE	PNP									
CTPI544	CLE	PNP	16								
CTPI545	CLE	PNP	16								
CTPI552	CLE	PNP	16								
CTPI553	CLE	PNP	16								
CTPI728	CLE	PNP	63				500	30†	50†	75†	
CTPI729	CLE	PNP	63				500	30†	50†	75†	
CTPI730	CLE	PNP	63				500	30†	50†	75†	
CTPI731	CLE	PNP	63				500	60†	100†	150†	
CTPI732	CLE	PNP	63				500	60†	100†	150†	
CTPI733	CLE	PNP	63				500	60†	100†	150†	
CTPI735	CLE	PNP	63				500	30†	50†	75†	
CTPI736	CLE	PNP	63				500	60†	100†	150†	
CTP3500	CLE	PNP									
CTP3503	CLE	PNP									
CTP3504	CLE	PNP									
CTP3508	CLE	PNP									
CTP3544	CLE	PNP	16								
CTP3545	CLE	PNP	16								
CTP3552	CLE	PNP	16								
CTP3553	CLE	PNP	16								
DA3F3	MH	PNP	56	(35)		1A					
GA52819	WE	PNP		4.5			1		150		
GA52830	WE	PNP		4.5			20		215		
GA53080	WE	PNP(PC)									
GA53104	WE	PNP							45		
GA53149	WE	PNP		4.5			1		49		
GA53194	WE	PNP		10.5			10		19		
GA53213	WE	PNP		4.5			1		24		
GA53242	WE	PNP		1.5			200	45†	80†	133†	
GA53270	WE	NPN		4.5			1		49		
GET691	GEC	PNP		6			1		60		
GET875	GEC	PNP	36	4.5			1		90†		
GF45017	WE	PNP		1.5			200	45†	80†	133†	
GFT0R	TK	PNP		3			1		33		
GFT20/30	TK	PNP		3			1		33		
GFT20/60	TK	PNP		3			1		33		
GFT21R	TK	PNP		3			3		90		
GFT21/30	TK	PNP		3			3		90		

† D.C. current gain

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
V _{ce}	I _c mA	db	V _{ce}	I _c mA	P _c mW		
				13A	65W		CTPI514
				13A			CTPI530
			20	25A	75W		CTPI544
			20	25A	75W		CTPI545
			20	25A	75W		CTPI552
			20	25A	75W		CTPI553
				3A			CTPI728
				3A			CTPI729
				3A			CTPI730
				3A			CTPI731
				3A			CTPI732
				3A			CTPI733
				3A			CTPI735
				3A			CTPI736
				15A			CTP3500
				15A			CTP3503
				15A			CTP3504
				15A			CTP3508
			20	25A	75W		CTP3544
			20	25A	75W		CTP3545
			20	25A	75W		CTP3552
			20	25A	75W		CTP3553
			35		100W		DA3F3
				50			GA52819
				500			GA52830
				50			GA53080
				50	120		GA53104
15 *				50	120	* Max.	GA53149
				30	100		GA53194
25 *				50	120	* Max.	GA53213
				500			GA53242
				50	50		GA53270
				10	35		GET691
			15	150	75		GET875
				500			GF45017
	5 *				80	* Max.	GFT20R
	10 *				80	* Max.	GFT20/30
	10				80		GFT20/60
	5 *				80	* Max.	GFT21R
	10 *				80	* Max.	GFT21/30

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
GFT21/60	TK	PNP		3				3		90	
GFT22	TK	PNP		3				5		150	
GFT22R	TK	PNP		3				5		150	
GFT22/30	TK	PNP		3				5		150	
GFT22/60	TK	PNP		3				5		150	
GFT25R	TK	PNP		3				2		50	
GFT25/30	TK	PNP		3				2		50	
GFT25/60	TK	PNP		3				2		50	
GFT31/30	TK	PNP		3				30		30	
GFT31/60	TK	PNP		3				30		30	
GFT32/30	TK	PNP		3				50		50	
GFT32/60	TK	PNP		3				50		50	
GFT34/30	TK	PNP		3				75		75	
GFT34/60	TK	PNP		3				75		75	
GFT44/30	TK	PNP		6				1		60	
GFT45/30	TK	PNP		6				1		40	
GFT3008/9	TK	PNP		2				500	25†	33†	50†
GFT3008/30	TK	PNP	16	2				500	25†	33†	50†
GFT3008/40	TK	PNP	2	2				500	25†	33†	50†
GFT3008/60	TK	PNP	2	2				500	25†	33†	50†
GFT3008/80	TK	PNP		2				500	25†	33†	50†
GFT3408/20	TK	PNP		2				500	40†	60†	80†
GFT3408/40	TK	PNP		2				500	40†	60†	80†
GFT3408/60	TK	PNP		2				500	40†	60†	80†
GFT3408/80	TK	PNP		2				500	40†	60†	80†
GFT8024	TK	PNP		2							
GT364	GT	NPN		4.5				1		20	
GT365	GT	NPN		4.5				1		40	
GT366	GT	NPN		4.5				1		100	
GT792	GT	NPN		4.5				1		100	
GT792R	GT	NPN		4.5				1		60	
GT948R	GT	NPN		4.5				1		40	
GT1200	GT	NPN									
GT1201	GT	NPN									
GT1202	GT	NPN									
GT1624	GT	NPN		6				1		70	
GT1644	GT	PNP		6				1		15	
GT1658	GT	NPN									
GTA1	ROS	PNP		6				0.5		40	
GTA2	ROS	PNP		6				0.5		100	

† D.C. current gain

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
Vce	Ic mA	db	Vce	Ic mA	Pc mW		
		10 *			80	* Max.	GFT21/60
		10 *			80	* Max.	GFT22
		5 *			80	* Max.	GFT22R
		10 *			80	* Max.	GFT22/30
		10 *			80	* Max.	GFT22/60
		5 *			80	* Max.	GFT25R
		10 *			80	* Max.	GFT25/30
		10 *			80	* Max.	GFT25/60
					125		GFT31/30
					125		GFT31/60
					125		GFT32/30
					125		GFT32/60
					125		GFT34/30
					125		GFT34/60
		38 *			63	* Max.	GFT44/30
		36 *			63	* Max.	GFT45/30
			3A				GFT3008/20
			3A		8W		GFT3008/30
			3A				GFT3008/40
			3A				GFT3008/60
			3A				GFT3008/80
			3A				GFT3408/20
			3A				GFT3408/40
			3A				GFT3408/60
			3A				GFT3408/80
			8A				GFT8024
					150		GT364
					150		GT365
					150		GT366
					100		GT792
					125		GT792R
6	I	20			125		GT948R
6	I	20			120		GTI200
6	I	20			120		GTI201
							GTI202
					120		GTI624
					225		GTI644
					150		GTI658
		36 *			63	* Max.	GTAI
		38 *			63	* Max.	GTA2

TRANSISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
GTA3	ROS	PNP								65	
GTE1	ROS	PNP		3				3		47	
GTE2	ROS	PNP		6				10		22	
GTL3	ROS	PNP		2				500	25†	33†	50†
GTV	ROS	PNP		3				0.5		30	
H3A	MH	PNP									
H4A	MH	PNP									
H45	MH	PNP									
HA5024	HA	NPN	55								
HA7501	HA	PNP	55	4.5				1	4		
HA7502	HA	PNP	55	4.5				1	13		
HA7503	HA	PNP	55	4.5				1	13		
HA7505	HA	PNP	55	4.5				1	4		
HA7506	HA	PNP	55	4.5				1	10		
HA7507	HA	PNP	55	4.5				1	9		
HA7508	HA	PNP	55	4.5				1	13		
HA7509	HA	PNP	55	4.5				1	6		
HA7510	HA	PNP	55	4.5				1	19		
HA7520	HA	PNP		4.5				1		10	
HA7521	HA	PNP		4.5				1		10	
HA7522	HA	PNP		4.5				1		20	
HA7523	HA	PNP		4.5				1		20	
HA7524	HA	PNP		4.5				1		20	
HA7525	HA	PNP		4.5				1		20	
HA7526	HA	PNP		4.5				1		42	
HA7527	HA	PNP		4.5				1		42	
HA7528	HA	PNP		4.5				1		42	
HA7530	HA	PNP		4.5				1		10	
HA7531	HA	PNP		4.5				1		10	
HA7532	HA	PNP		4.5				1		20	
HA7533	HA	PNP		4.5				1		20	
HA7534	HA	PNP		4.5				1		20	
HA7535	HA	PNP		4.5				1		20	
HA7536	HA	PNP		4.5				1		42	
HS7537	HA	PNP		4.5				1		42	
HA7538	HA	PNP		4.5				1		42	
HF100	ROS	PNP									
HF200	ROS	PNP		10.5				3		8.5	
HJ36	HIT	PNP	16								
HJ60	HIT	PNP	13								

† D.C. current gain.

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
Vce	Ic mA	db	Vce	Ic mA	Pc mW		
	15 *			2	200		GTA3
	15 *			10	125	* Max.	GTE1
	15 *			30	125	* Max.	GTE2
				3A			GTL3
	55 *			10	125	* Max.	GTV
				600			H3A
				750			H4A
				3.5A			H45
	15			200	1.5W		HA5024
	50				500		HA7501
	50				500		HA7502
	110				500		HA7503
	20				500		HA7505
	35				500		HA7506
	20				500		HA7507
	50				500		HA7508
	30				500		HA7509
	35				500		HA7510
					1W		HA7520
					1W		HA7521
					1W		HA7522
					1W		HA7523
					1W		HA7524
					1W		HA7525
					1W		HA7526
					1W		HA7527
					1W		HA7528
					400		HA7530
					400		HA7531
					400		HA7532
					400		HA7533
					400		HA7534
					400		HA7535
					400		HA7536
					400		HS7537
	15 *			50	30	* Max.	HA7538
	10 *			50	30	* Max.	HF100
				1A	4W		HF200
	25			15	80		HJ36
	12						HJ60

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
LT55	CBS	PNP	27	2				500	20†		
LT5021	CBS	PNP	27	2				500	20†		
LT5022	CBS	PNP	27	2				500	20†		
LT5023	CBS	PNP	27	2				500	40†		
LT5024	CBS	PNP	27	2				500	40†		
LT5025	CBS	PNP	16	2				500	40†		
LT5026	CBS	PNP	27	2				500	60		
LT5027	CBS	PNP	27	2				500	60†		
LT5028	CBS	PNP	16	2				500	60†		
LT5029	CBS	PNP	27	2				500	40†		
LT5030	CBS	PNP	27	2				500	40†		
LT5031	CBS	PNP	16	2				500	40†		
LT5032	CBS	PNP	27	2				500	60†		
LT5033	CBS	PNP	27	2				500	60†		
LT5034	CBS	PNP	16	2				500	60†		
LT5035	CBS	PNP	27	2				500	20†		
LT5036	CBS	PNP	27	2				500	20†		
LT5037	CBS	PNP	27	2				500	40†		
LT5038	CBS	PNP	27	2				500	40†		
LT5039	CBS	PNP	16	2				500	40†		
LT5040	CBS	PNP	27	2				500	60†		
LT5041	CBS	PNP	27	2				500	60†		
LT5042	CBS	PNP	16	2				500	60†		
LT5043	CBS	PNP	27	2				500	20†		
LT5044	CBS	PNP	27	2				500	20†		
LT5045	CBS	PNP	16	2				500	20†		
LT5046	CBS	PNP	27	2				500	40†		
LT5047	CBS	PNP	27	2				500	40†		
LT5048	CBS	PNP	16	2				500	40†		
LT5049	CBS	PNP	27	2				500	60†		
LT5050	CBS	PNP	27	2				500	60†		
LT5051	CBS	PNP	16	2				500	60†		
LT5052	CBS	PNP	27	2				750	30†		
LT5053	CBS	PNP	27	2				750	30†		
LT5054	CBS	PNP	16	2				750	30†		
LT5055	CBS	PNP	27	2				750	60†		
LT5056	CBS	PNP	27	2				750	60†		
LT5057	CBS	PNP	16	2				750	60†		
LT5058	CBS	PNP	27	2				750	100†		
LT5059	CBS	PNP	27	2				750	100†		

† D.C. current gain.

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
Vce	Ic mA	db	Vce	Ic mA	Pc mW		
			60	3A	20W		LT55
			30	3A	20W		LT5021
			30	3A	20W		LT5022
			30	3A	20W		LT5023
			30	3A	20W		LT5024
			30	3A	20W		LT5025
			30	3A	20W		LT5026
			30	3A	20W		LT5027
			30	3A	20W		LT5028
			60	3A	20W		LT5029
			60	3A	20W		LT5030
			60	3A	20W		LT5031
			60	3A	20W		LT5032
			60	3A	20W		LT5033
			60	3A	20W		LT5034
			90	3A	20W		LT5035
			90	3A	20W		LT5036
			90	3A	20W		LT5037
			90	3A	20W		LT5038
			90	3A	20W		LT5039
			90	3A	20W		LT5040
			90	3A	20W		LT5041
			90	3A	20W		LT5042
			100	3A	20W		LT5043
			100	3A	20W		LT5044
			100	3A	20W		LT5045
			100	3A	20W		LT5046
			100	3A	20W		LT5047
			100	3A	20W		LT5048
			100	3A	20W		LT5049
			100	3A	20W		LT5050
			100	3A	20W		LT5051
			30	4.5A	30W		LT5052
			30	4.5A	30W		LT5053
			30	4.5A	20W		LT5054
			30	4.5A	30W		LT5055
			30	4.5A	30W		LT5056
			30	4.5A	30W		LT5057
			30	4.5A	30W		LT5058
			30	4.5A	30W		LT5059

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
LT5060	CBS	PNP	16	2				750	100†		
LT5061	CBS	PNP	27	2				750	30†		
LT5062	CBS	PNP	27	2				750	30†		
LT5063	CBS	PNP	16	2				750	60†		
LT5064	CBS	PNP	27	2				750	60†		
LT5065	CBS	PNP	27	2				750	60†		
LT5066	CBS	PNP	16	2				750	60†		
LT5067	CBS	PNP	27	2				750	100†		
LT5068	CBS	PNP	27	2				750	100†		
LT5069	CBS	PNP	16	2				750	100†		
LT5070	CBS	PNP	27	2				750	30†		
LT5071	CBS	PNP	27	2				750	30†		
LT5072	CBS	PNP	16	2				750	30†		
LT5073	CBS	PNP	27	2				750	60†		
LT5074	CBS	PNP	27	2				750	60†		
LT5075	CBS	PNP	16	2				750	60†		
LT5076	CBS	PNP	27	2				750	100†		
LT5077	CBS	PNP	27	2				750	100†		
LT5078	CBS	PNP	16	2				750	100†		
LT5079	CBS	PNP	27	2				750	30†		
LT5080	CBS	PNP	27	2				750	30†		
LT5081	CBS	PNP	16	2				750	30†		
LT5082	CBS	PNP	27	2				750	60†		
LT5083	CBS	PNP	27	2				750	60†		
LT5084	CBS	PNP	16	2				750	60†		
LT5085	CBS	PNP	27	2				750	100†		
LT5086	CBS	PNP	27	2				750	100†		
LT5087	CBS	PNP	16	2				750	100†		
LT5088	CBS	PNP	27	3				1A	40†		
LT5089	CBS	PNP	27	3				1A	40†		
LT5090	CBS	PNP	16	3				1A	40†		
LT5091	CBS	PNP	27	3				1A	80†		
LT5092	CBS	PNP	27	3				1A	80†		
LT5093	CBS	PNP	16	3				1A	80†		
LT5094	CBS	PNP	27	3				1A	160†		
LT5095	CBS	PNP	27	3				1A	160†		
LT5096	CBS	PNP	16	3				1A	160†		
LT5097	CBS	PNP	27	3				1A	40†		
LT5098	CBS	PNP	27	3				1A	40†		
LT5099	CBS	PNP	16	3				1A	40†		

† D.C. current gain

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
Vce	Ic mA	db	Vce	Ic mA	Pc mW		
			30	4.5A	30W		LT5060
			60	4.5A	30W		LT5061
			60	4.5A	30W		LT5062
			60	4.5A	30W		LT5063
			60	4.5A	30W		LT5064
			60	4.5A	30W		LT5065
			60	4.5A	30W		LT5066
			60	4.5A	30W		LT5067
			60	4.5A	30W		LT5068
			60	4.5A	30W		LT5069
			75	4.5A	30W		LT5070
			75	4.5A	30W		LT5071
			75	4.5A	30W		LT5072
			75	4.5A	30W		LT5073
			75	4.5A	30W		LT5074
			75	4.5A	30W		LT5075
			75	4.5A	30W		LT5076
			75	4.5A	30W		LT5077
			75	4.5A	30W		LT5078
			90	4.5A	30W		LT5079
			90	4.6A	30W		LT5080
			90	4.5A	30W		LT5081
			90	4.5A	30W		LT5082
			90	4.5A	30W		LT5083
			90	4.5A	30W		LT5084
			90	4.5A	30W		LT5085
			90	4.5A	30W		LT5086
			90	4.5A	30W		LT5087
			30	6A	40W		LT5088
			30	6A	40W		LT5089
			30	6A	40W		LT5090
			30	6A	40W		LT5091
			30	6A	40W		LT5092
			30	6A	40W		LT5093
			30	6A	40W		LT5094
			30	6A	40W		LT5095
			30	6A	40W		LT5096
			60	6A	40W		LT5097
			60	6A	40W		LT5098
			60	6A	40W		LT5099

Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
LT5100	CBS	PNP	27	3				1A	80†		
LT5101	CBS	PNP	27	3				1A	80†		
LT5102	CBS	PNP	16	3				1A	80†		
LT5103	CBS	PNP	27	3				1A	160†		
LT5104	CBS	PNP	27	3				1A	160†		
LT5105	CBS	PNP	16	3				1A	160†		
LT5106	CBS	PNP	27	3				1A	40†		
LT5107	CBS	PNP	27	3				1A	40†		
LT5108	CBS	PNP	16	3				1A	40†		
LT5109	CBS	PNP	27	3				1A	80†		
LT5110	CBS	PNP	27	3				1A	80†		
LT5111	CBS	PNP	16	3				1A	80A		
LT5112	CBS	PNP	27	3				1A	160†		
LT5113	CBS	PNP	27	3				1A	160†		
LT5114	CBS	PNP	16	3				1A	160†		
LT5115	CBS	PNP	27	3				1A	40†		
LT5116	CBS	PNP	27	3				1A	40†		
LT5117	CBS	PNP	16	3				1A	40†		
LT5118	CBS	PNP	27	3				1A	80†		
LT5119	CBS	PNP	27	3				1A	80†		
LT5120	CBS	PNP	16	3				1A	80†		
LT5121	CBS	PNP	27	3				1A	160†		
LT5122	CBS	PNP	27	3				1A	160†		
LT5123	CBS	PNP	16	3				1A	160†		
LT5152	CBS	PNP	27	2				500	20†		
LT5153	CBS	PNP	27	2				500	20†		
LT5161	CBS	PNP		2				1A	40†		
MD499	SC	PNP									
MD501	SC	PNP									
MD502	SC	PNP									
MD503	SC	PNP									
MD504	SC	PNP									
MFT151	MFD	PNP	1					1		30	
MFT152	MFD	PNP	1					1		50	
MFT153	MFD	PNP	1					1		80	
MN32	MR	PNP		(12)				500	30†		70†
MN48	MR	PNP								100†	
MT10	ME	PNP	13	6				1		22	
MT19	ME	PNP	13	6				1		80	
MT87	ME	PNP	13	6				1		38	

† D.C. current gain

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
V _{ce}	I _c mA	db	V _{ce}	I _c mA	P _c mW		
			60	6A	40W		LT5100
			60	6A	40W		LT5101
			60	6A	40W		LT5102
			60	6A	40W		LT5103
			60	6A	40W		LT5104
			60	6A	40W		LT5105
			75	6A	40W		LT5106
			75	6A	40W		LT5107
			75	6A	40W		LT5108
			75	6A	40W		LT5109
			75	6A	40W		LT5110
			75	6A	40W		LT5111
			75	6A	40W		LT5112
			75	6A	40W		LT5113
			75	6A	40W		LT5114
			90	6A	40W		LT5115
			90	6A	40W		LT5116
			90	6A	40W		LT5117
			90	6A	40W		LT5118
			90	6A	40W		LT5119
			90	6A	40W		LT5120
			90	6A	40W		LT5121
			90	6A	40W		LT5122
			90	6A	40W		LT5123
			30	3A	20W		LT5152
			60	3A	20W		LT5153
				6A			LT5161
			18	50	30		MD499
			12	50	25		MD501
			20	50	25		MD502
			20	50	25		MD503
			25	50	30		MD504
				150	200		MFT151
				150	200		MFT152
				150	200		MFT153
				3A			MN32
				3A			MN48
			50				MT10
			25				MT19
			25				MT87

Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
MT88	ME	PNP	13	6						80	
MT760	ME	PNP	13	6						40	
MT761	ME	PNP	13	6						75	
MT762	ME	PNP	13	6						100	
MT763	ME	PNP	13	6						120	
MT764	ME	PNP	13	6						200	
OC2A	VH	PNP	5	4.5				25			50
OC2B	VH	PNP	5	4.5				25			50
OC2C	VH	PNP	5								
OC3A	VH	PNP	5	4.5				40			80
OC3B	VH	PNP	5	4.5				40			80
OC3C	VH	PNP	5								
OC4A	VH	PNP	5	4.5				70			150
OC4B	VH	PNP	5	4.5				70			150
OC4C	VH	PNP	5								
OC24	MULL	PNP	16	3			400			180	
OC43	MULL	PNP	1								
OC53	AMP	PNP									
OC54	AMP	PNP									
OC55	AMP	PNP									
OC56	AMP	PNP									
OC74	PHIL	PNP	1								
OC79	PHIL	PNP	1	6			50	35†	42†	110†	
OC83	MULL	PNP	1	6			1			90	
OC84	MULL	PNP	1	6			1			90	
OC122	MULL	PNP	3	6			100	50†	140†		
OC123	MULL	PNP	3	6			100	50†	160†		
OC202	MULL	PNP	1	6			1	45	70		120
OC205	MULL	PNP	1	6			10		40		
OC206	MULL	PNP	1	6			1		40		
OC318	INT	PNP	46								
OC463	INT	PNP	13					20	30		
OC463K	INT	PNP	13					20	30		
OC466	INT	PNP	13					20	30		
OC466K	INT	PNP	13					20	30		
OC468	INT	PNP	13					40			
OC468K	INT	PNP	13					40			
OC469	INT	PNP	13					10			
OC469K	INT	PNP	13					10			
OC480	INT	PNP	13					10	20		

† D.C. current gain.

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
V _{ce}	I _c mA	db	V _{ce}	I _c mA	P _c mW		
			25				MT88
			15				MT760
			10				MT761
			10				MT762
			6				MT763
			20				MT764
3	0.5	15 *	30	100	120	*Max.	OC2A
3	0.5	15 *	30	100	120	*Max.	OC2B
			30	100	80		OC2C
3	0.5	15 *	30	100	120	*Max.	OC3A
3	0.5	15 *	30	120	120	*Max.	OC3B
3			30	100	80		OC3C
3	0.5	15 *	30	100	120	*Max.	OC4A
3	0.5	15 *	30	120	120	*Max.	OC4B
3			30	100	80		OC4C
			40	1A	15W		OC24
			15	50			OC43
				10	10		OC53
				10	10		OC54
				10	10		OC55
				10	10		OC56
6	5	30	20	300			OC74
			26	300	550		OC79
3	5	8	20	500	160		OC83i
			32	500	160		OC84
			24	500	205		OC122
			25	500	205		OC123
3	0.5	8	15	50	100		OC202
3	0.5	7	40	125	125		OC205
3	0.5	7	16	125	125		OC206
			20	300	330		OC318
			10	50	330		OC463
			10	50	660		OC463K
		8	10	50	330		OC466
		8	10	50	660		OC466K
			10	50	300		OC468
			10	50	660		OC468K
			20	50	300		OC469
			20	50	660		OC469K
			125	50	300		OC480

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
V _{ce}	I _c mA	db	V _{ce}	I _c mA	P _c mW		
			125	50	660		OC480K
			20	10	25		OC810
			10	10	25		OC811
			6	5	25		OC812
			10	10	25		OC813
			6	5	25		OC814
			10	20	50		OC815
			10	20	50		OC816
			10	125	100		OC820
			10	125	100		OC821
							OC822
							OC823
			10	1A			OC830
			10	1A			OC831
			30	1A			OC832
			60	1A			OC833
				10	20		OC870
				10	20		OC871
			10	10	20		OC872
				15A			OD650B
				100			OD760
1.5	0.5	33		10	150		P13
1.5	0.5	33		10	150		P13A
1.5	0.5	12		10	150		P13B
1.5	0.5	33		10	150		P14
1.5	0.5	33		10	150		P15
				10A			PT900
				10A			PT901
			12	150	100		SFT101
			12	150	100		SFT102
			12	150	100		SFT103
			12	500	550		SFT130
				500	550		SFT131
				10	120		SFT155
			15	3A	25W		SFT213
			30	3A	25W		SFT214
			40	3A	25W		SFT250
				15A	50W		SFT265
				15A	50W		SFT266
				15A	50W		SFT267

Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
ST5	NEC	PNP	49								
ST161	NEC	NPN	5	6				1		10	
ST162	NEC	NPN	5	6				1		10	
ST171	NEC	NPN	5	6				1		15	
ST172	NEC	NPN	5	6				1		15	
ST300	NEC	PNP	5	6				1	10	20	30
ST301	NEC	PNP	5	6				1	30	40	50
ST302	NEC	PNP	5	6				1	50	65	80
ST303	NEC	PNP	5	6				1	80	130	
ST410	TT										
ST411	TT										
ST3031	TT	NPN	13	6				1	40	60	
ST4150	TT	NPN	13	6				500	15†	25†	
STC389	SIL	NPN									
STC1001	SIL	NPN									
SYL1326	SYL	NPN	17								
SYL1327	SYL	NPN	17	1.5	300		50	40†			
SYL1380	SYL	NPN	17								
SYL1454	SYL	PNP	17								
SYL1468	SYL	NPN	17								
SYL1591	SYL	NPN	17								
SYL1592	SYL	PNP	17								
SYL1617	SYL	NPN	17								
SYL1655	SYL	PNP	17								
SYL1684	SYL	PNP	3	1.5	800				20†		80†
SYL1690	SYL	PNP	17								
SYL1697	SYL	PNP	17								
SYL1717	SYL	PNP	17								
SYL1750	SYL	NPN	6					1	15		125
T1000	PCO	PNP		4.5				2	45		85
T1001	PCO	PNP		4.5				2	70		120
T1657	SC	PNP	13	6				1	10†		
T1690	SC	PNP	13	6				1	20		80
T1691	SC	PNP	13	6				1	20		200
T1692	SC	PNP	13	6				1	20		100
T1693	SC	PNP	13								
T1694	SC	PNP	13	10.5				2	10†		
T1695	SC	PNP	13								
T1696	SC	PNP	13								
T1737	SC	PNP	13	6				1	50	70	150

† D.C. current gain.

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
V _{ce}	I _c mA	db	V _{ce}	I _c mA	P _c mW		
			25		700		ST5
			20	7	30		ST161
			20	7	30		ST162
			20	7	30		ST171
			20	7	30		ST172
6	1	15	20	8	50		ST300
6	1	15	20	8	50		ST301
6	1	15	20	8	50		ST302
6	1	15	20	8	50		ST303
			60				ST410
			45				ST411
			20		150		ST3031
			60		5W		ST4150
							STC389
							STC1001
			20	200	80		SYL1326
			15	200	150		SYL1327
			20	150	150		SYL1380
			15	200	120		SYL1454
			15	200	150		SYL1468
			15	200	150		SYL1591
			15	200	100		SYL1592
			10		150		SYL1617
			15	400			SYL1655
			20		120		SYL1684
			15	200	120		SYL1690
			18	100	120		SYL1697
			24	200	120		SYL1717
			25	100	150		SYL1750
				150	250		T1000
				60	100		T1001
			25		30		T1657
			20	50	30		T1690
			20	50	30		T1691
			20	50	30		T1692
10-5	2	9	15		30		T1693
			15		30		T1694
			15		30		T1695
			15		30		T1696
			25	50	30		T1737

Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
TI738	SC	PNP	13	6			1		30	45	150
TI814	SC	PNP	13	6			1		10†		
TF70	SH	NPN	5	4.5			1		7.4	10	16
TF71	SH	NPN	5	4.5			1		16	24	49
TF72	SH	NPN	5	4.5			1		49	99	
TF77	SH	PNP		4.5				50		23†	
TF77/30	SH	PNP	30	3		180		5		28	
TF90/30	SH	PNP						500		75†	
TF90/60	SH	PNP	30					500		75†	
THP36	TH	NPN	11						9	16	
THP61	TH	NPN	11						19	25	
THP62	TH	NPN	11						9	12	
TK20C	STC	PNP	47	4.5	28	500	1		20	40	100
TK23C	STC	PNP	47	10.5			1		35	50	70
TK24C	STC	PNP	47	10.5			1			40	
TK25C	STC	PNP	47	4.5			1			60	
TK28C	STC	PNP	47				15			51	
TK30C	STC	PNP	47	4.5	30		1		20	40	85
TK31C	STC	PNP	47	4.5	50		1		20	60	150
TK40C	STC	PNP	47	10.5			1		60	90	200
TK41C	STC	PNP	47	10.5			1		20	40	50
TK42C	STC	PNP	47	10.5			1		45	70	150
TK70C	STC	NPN	64	10.5			3		30	50	
TK71C	STC	NPN	64	10.5			3		10	30	
TK72C	STC	NPN	64	10.5			3		10		
TR34	IND	PNP		6			1		10	15	20
TR43	IND	PNP		1.5			20			45†	
TR44	IND	PNP		1.5			20			30†	
TR45	IND	PNP		1.5			20			20†	
TR320	IND	PNP		1.5			20			50†	
TR321	IND	PNP		1.5			20			80†	
TR323	IND	PNP		1.5			20			75†	
TR383	IND	PNP		1.5			150			72†	
TR482	IND	PNP					1			20	
TR508	IND	PNP		1.5			20			126†	
TR650	IND	PNP		6			1		25	40	70
TR653	IND	PNP		6			1		25	40	70
TR721	IND	PNP		6			1		40	45	150
TR722	IND	PNP		6			1		15	22	45
TS617	TS	PNP	13	1.5			20			52	

† D.C. current gain.

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
V _{ce}	I _c mA	db	V _{ce}	I _c mA	P _c mW		
3	0.5	25	30	10	35		T1738
			25		30		T1814
			15	10	100		TF70
			15	10	75		TF71
3	0.5	20	15	10	50		TF72
				600			TF77
			32	15A	7W		TF77/30
			64	15A	7W		TF90/30
		17		25	150		TF90/60
							THP36
		17		25	150		THP61
4.5	0.5	4.5		25	150		THP62
3	0.5	6	12		200		TK20C
			30		200		TK23C
			20		200		TK24C
			6		200		TK25C
			25		200		TK28C
4.5	0.5	4.5	10		200		TK30C
			5		200		TK31C
			20		200		TK40C
4.5	0.5	6	15		200		TK41C
4.5	0.5	6	15		200		TK42C
			20		325		TK70C
			20		325		TK71C
			12		325		TK72C
			25	150	120		TR34
				400	140		TR43
				400	150		TR44
				400	150		TR45
			16	200	150		TR320
			16	200	150		TR321
			12	200	150		TR323
			15	200	150		TR383
			10	200	150		TR482
			12	200	150		TR508
4.5	0.5	10	25	400	150		TR650
4.5	0.5	10	20	400	150		TR653
			22	200	150		TR721
		25 *	22	200	150		TR722
			25	200	150		TS617

*Max.

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V _{ce}	I _{co}		I _b μA	I _c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
UST10	UST	PNP								22	
UST19	UST	PNP								80	
UST81	UST	PNP		6				1		90	
UST87	UST	PNP								38	
UST88	UST	PNP								80	
UST722	UST	PNP		6				1		22	
UST760	UST	PNP		6				1		40	
UST	UST	PNP		6				1		75	
UST762	UST	PNP									
UST763	UST	PNP		6				1		120	
UST764	UST	PNP		6				1		200	
V10/50AC	NM	PNP	5	4.5				1	50	75	125
VB701	EE	PNP	13	4.5				0.7	33		125
VB704	EE	PNP	13	6				1.0	27		70
VB709	EE	PNP	13	10.5				0.5	50		150
WT10	WH	NPN	67	2				500	20†		
WT11	WH	NPN	67	2				500	20†		
WT12	WH	NPN	67	2				500	20†		
WT13	WH	NPN	67	2				500	20†		
WT14	WH	NPN	67	2				500	20†		
WT20	WH	NPN	67	2				500	25†		
WT21	WH	NPN	67	2				500	25†		
WT22	WH	NPN	67	2				500	25†		
WT23	WH	NPN	67	2				500	25†		
WT24	WH	NPN	67	2				500	25†		
WX1015	WES	NPN	67								
WX1015A	WES	NPN	67								
WX1015B	WES	NPN	67								
WX1015C	WES	NPN	67								
WX1015D	WES	NPN	67								
WX1015E	WES	NPN	67								
WX1015F	WES	NPN	67								
WX1016	WES	NPN	67								
WX1016A	WES	NPN	67								
WX1016B	WES	NPN	67								
WX1016C	WES	NPN	67								
WX1016D	WES	NPN	67								
WX1016E	WES	NPN	67								
WX1016F	WES	NPN	67								
XAI21	ES	PNP		10.5				1		60	

† D.C. current gain.

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
Vce	Ic mA	db	Vce	Ic mA	Pc mW		
		12 *			165 165 165 165 165	*Max.	UST10 UST19 UST81 UST87 UST88
		16			165 150 150 150		UST722 UST760 UST761 UST762 UST763
					150 125		UST764
4.5	0.7	12	10	30	50		V10/50AC
6	1	8	30	50	50		VB701
		10	30	50	50		VB704
				50	50		VB709
			30	7.5A			WT10
			60	7.5A			WT11
			100	7.5A			WT12
			150	7.5A			WT13
			200	7.5A			WT14
			30	7.5A			WT20
			60	7.5A			WT21
			100	7.5A			WT22
			150	7.5A			WT23
			200	7.5A			WT24
			30	5A			WX1015
			60	5A			WX1015A
			100	5A			WX1015B
			150	5A			WX1015C
			200	5A			WX1015D
			250	5A			WX1015E
			300	5A			WX1015F
			30	5A			WX1016
			60	5A			WX1016A
			100	5A			WX1016B
			150	5A			WX1016C
			200	5A			WX1016D
			250	5A			WX1016E
			300	5A			WX1016F
			10	80			XAI21

Warning : Reduce base current to zero before connecting transistor

TRANS- ISTOR	MANUFACTURER	CONNECTIONS		V_{ce}	I'_{co}		I_b μA	I_c mA	β		
		TYPE	No.		TYP. μA	MAX. μA			MIN.	TYP.	MAX.
XAI22	ES	PNP		10.5				1		60	
XAI23	ES	PNP		10.5				1		60	
XAI51	ES	PNP		(25)				50		40†	
XAI52	ES	PNP		(25)				50		80†	
XAI61	ES	PNP									
XAI62	ES	PNP									
XB121	ES	PNP									
XCI41	ES	PNP	16	1.5				700		62	
ZT20	FERR	NPN		6				10	15†	50†	

† D.C. current gain

TYPICAL NOISE			MAX. RATINGS			REMARKS	TRANS- ISTOR
Vce	Ic mA	db	Vce	Ic mA	Pc mW		
				10	80		XA122
				10	80		XA123
	16				66		XA151
	16				66		XA152
	12		100		150		XA161
	12		100		150		XA162
	105		100		50		XB121
	40			1.5	11W		XC141
	15			50	150		ZT20

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